

DEPARTMENT OF AGRICULTURE

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

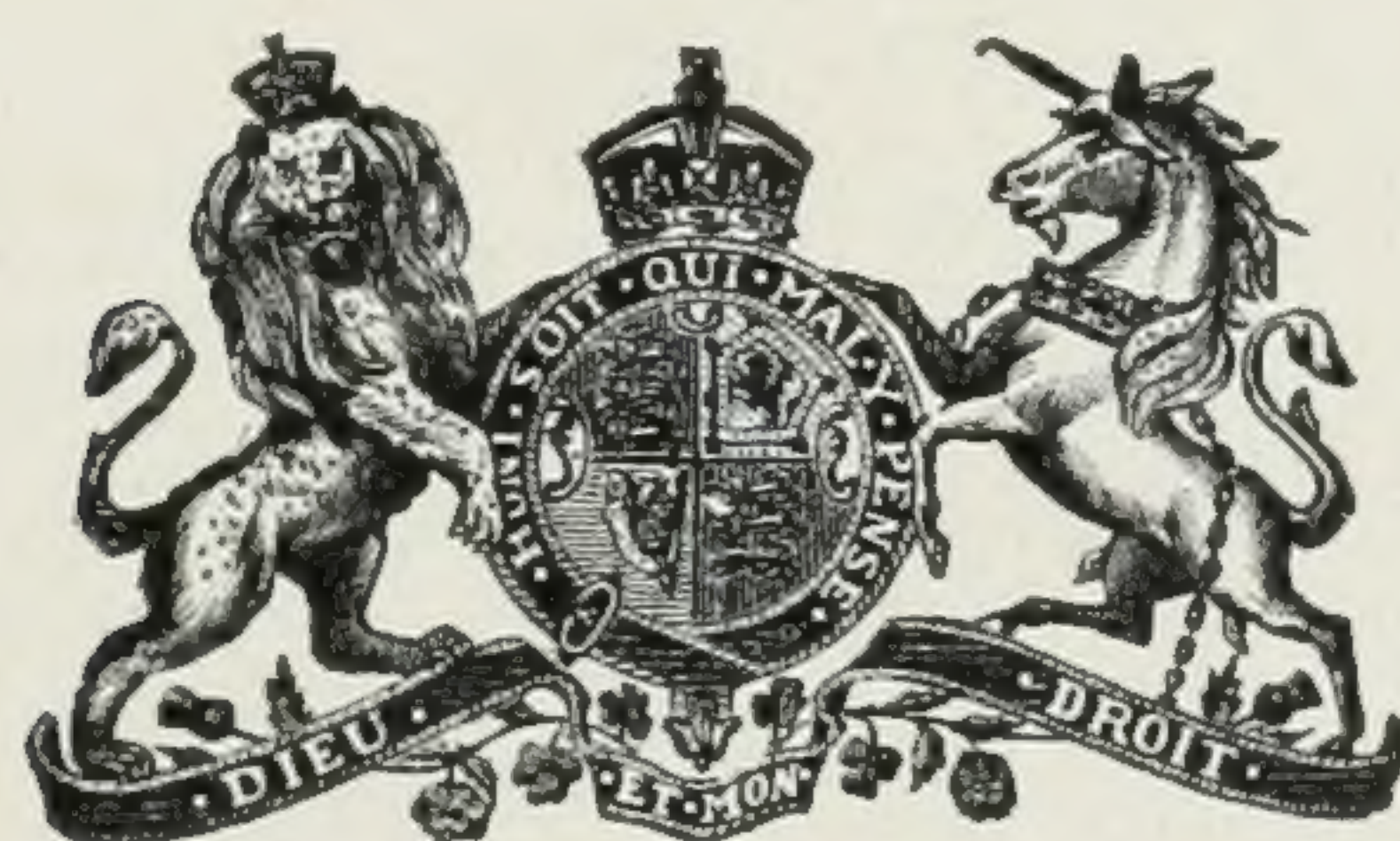
FOR THE

FISCAL YEAR ENDING MARCH 31

1914

DAIRYING, FRUIT, EXTENSION OF MARKETS AND COLD STORAGE

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

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REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

To the Honourable

The Minister of Agriculture.

SIR,—I have the honour to submit my Annual Report for the year ended March 31, 1914, covering the work of the Branch with respect to Dairying, Fruit, Extension of Markets, and Cold Storage.

DAIRYING.

THE PROGRESS OF DAIRYING.

The dairying industry, taking the total production of milk as a basis of comparison, continues to expand in every province. The increase is due more to improvement in the cows than it is to an increase in the number thereof. The figures of the last census, with respect to dairy production, were published during the year. These figures show that the total number of cows in Canada in 1911 was 2,594,179, an increase of only 185,502 as compared with the census of 1901. The increase in the number of cows during the decade was only 7 per cent, but the total production of milk during the same period increased 43 per cent. In 1900* the average yield of milk was 2,850 pounds per cow. In 1910 the average yield had risen to 3,805 pounds. It would have required an increase of 1,054,894 cows to have equalled the production of 1910 at the average yield of 1900.

The total value of milk and its products in 1910 was \$109,339,934, as compared with \$66,470,953 in 1900. If we apply this rate of increase to the year 1913 it gives a total production of approximately \$123,000,000.

The increase in the number of milch cows is confined to the four western provinces. The provinces of Alberta and Saskatchewan are showing the most rapid progress in dairy production. The combined value of the dairy production in these two provinces was only \$1,276,050 in 1900 as against \$15,421,758 in 1910. Every indication points to a large development of the dairying industry in the northwestern prairie country in the near future. The local market, including British Columbia, for which large quantities of dairy produce are now drawn from Eastern Canada

* The figures of production are always given for the year preceding that in which the census is taken.

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and from New Zealand at high prices, offers every inducement for a large extension of the industry in that territory.

The creamery industry continues to increase in Nova Scotia. The first attempt at factory dairying in that province was made in 1870, in which year a cheese factory was started at Paradise in Annapolis county. Other cheese factories were started in the 80's but most of these early ventures failed after a struggling existence chiefly because the supply of milk within a reasonable distance from a given centre was not sufficient to give the necessary support. Separator creameries failed for the same reason.

The creamery at Scotsburn operated from 1900 to 1910 by this Branch has served to demonstrate the adaptability of the cream-gathering system for Nova Scotia conditions and, with it as an object lesson, a number of successful creameries have been started during recent years. There is every reason to believe that an extensive creamery business will soon be built up in that province, to the material advantage of the whole community.

The manufacture of cheese in Canada is declining. The total production may still be estimated from the export figures, inasmuch as the total home consumption of cheese has not, as in the case of other dairy products, been very greatly increased in late years. The maximum export of 233,980,716 pounds of cheese in 1904 has decreased to 144,478,340 pounds for the year ending March 31, 1914. The increased demand of the home market accounts for a part of the shrinkage, but the bulk of it is due to a smaller output. This falling off in cheese production is the result of milk being diverted to the milk condensing, milk powder factories and creameries and to supply the demand for milk and cream in the growing towns and cities.

The growth in the number of city creameries is quite a marked development of the last two or three years.

THE EXPANDING HOME MARKET.

In the year 1903-4 the export value of dairy products, which was then at its maximum, amounted to over 40 per cent of the total production. In 1913 less than 20 per cent was exported. A comparison of the census figures of 1901 and 1911, reducing everything to a milk basis, shows that the increase in production during that period, was 43 per cent, the increase in total home consumption was 74 per cent and the increase in per capita consumption was 30 per cent.

The increased demand for cream for table use and for the manufacture of ice cream, is a very important factor in the home trade, although no exact figures can be quoted as showing the increase in consumption on this account. The total consumption of butter in Canada increased by 59 per cent between 1901 and 1911, and the per capita consumption of butter increased during the same period by 18 per cent. If the figures could be brought down to the ten-year period previous to 1913, the increase would probably be larger.

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THE EXPORT TRADE.

The export record for 1913 presents no very notable feature except the further decline of nearly two hundred thousand boxes, or between eleven and twelve million pounds of cheese as compared with 1912. The removal of the United States duty on milk and cream, and the reduction of the duty on butter from 6 to 2½ cents per pound, and on cheese from 6 cents per pound to 20 per cent ad valorem, has not affected the shipments of dairy produce to the United States to any very great extent. After the new tariff came into effect on October 3, there was a considerable movement of milk and cream across the border for the first two or three months, but owing to the great slump in the United States dairy markets the shipments fell off very rapidly after the New Year, and at the present time there is very little export of either milk or cream to the United States except that which is covered by definite contracts.

THE IMPORTATION OF NEW ZEALAND BUTTER.

The total quantity of New Zealand and Australian (chiefly New Zealand) butter imported into Canada at the port of Vancouver during the year ended March 31, 1913, was 6,018,022 pounds. The shipments have increased slightly during the past year, but not to the extent that was expected. The development of this trade has attracted considerable attention and great expectations have been built upon it, both in Canada and in Australasia, but it seems probable that it has about reached its limit, and that the increased production in the prairie provinces will be sufficient before many years have passed to supply all western demands.

THE EXPORT OF GREEN CHEESE.

It cannot be repeated too often that the Canadian cheese trade has been and is still being seriously injured by the export of green immature cheese. There are very serious complaints on this score from dealers in the United Kingdom. It would be well for Canadians to bear in mind that they are now meeting their first serious competition in supplying the Old Country markets with cheese of the cheddar type. It has been a very popular fallacy that Canadian cheese drove United States cheese out of the market. The fact is that the United States dropped out of the export trade because they required their whole production for domestic consumption. New Zealand, however, is likely to have an increasing surplus for export, and Holland and Siberia are preparing to secure a share of the trade. Canadian cheesemakers will have no difficulty in maintaining their present lead if they are not handicapped too severely by what may be termed the business management of the factory, for it is generally admitted that the quality of Canadian cheese, if properly handled after it is made, will easily hold its own with the product of any other country.

The long period during which the Canadian cheese industry was comparatively free from competition, that is to say from the time of the decline in the United States exports until the New Zealand shipments became large enough to compel attention,

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appears to have lulled those who are responsible for some things into a feeling of security—a very dangerous condition. It is time that there was an awakening of interest in matters which may affect the future of the trade.

FINCH AND BROME DAIRY STATIONS.

A statement of the business done at these stations will be found in appendix IV. The milk was received at both stations throughout the winter, and while the supply was rather small for two or three months, continuous operation seemed to be worth while for the purpose of encouraging the production of winter milk. The patrons at the Finch station are taking a great deal of interest in this matter and supplied nearly three times as much milk in the winter of 1913-14 as they did during the previous winter. The patrons of both stations appreciate very highly the clean, sweet, pasteurized skim-milk which is returned to them, and on that account the patrons at Finch prefer to have their milk manufactured into butter during the spring months in order to secure the skim-milk for stock raising purposes.

WINTER DAIRYING.

Winter dairying was first seriously advocated in Canada about twenty-four years ago and quite a large number of cheese factories were equipped at that time with facilities for making butter during the winter months. Unfortunately there followed a period of rather low prices for butter, which, together with the limited supply of milk, made the profitable operation of winter creameries a very difficult matter.

There were not many farmers at that time who were properly equipped for the profitable production of winter milk. During the intervening years stables have been improved, silos have been erected in large numbers and, with better feeding and care, milk can now be produced during the winter months in larger quantities and with more profit, especially as the winter prices for dairy products have materially and relatively increased. The demand for market milk and cream has enormously increased during the past ten years. Taking all these facts into consideration, the outlook for winter milk is exceedingly bright at present.

EXTENSION OF MARKETS.

The work carried on under this division was along the same lines as in previous years. Cargo inspection at ports in Great Britain and in Canada, inspection and general supervision of the subsidized refrigerator car services, the collection of statistics of prices for farm products, are the chief activities of the Extension of Markets Division.

With your authority, the chief of the division, Mr. W. W. Moore, visited the United Kingdom last autumn to get a closer view of the work being done by the cargo inspectors employed on that side of the Atlantic, and to carry out some reorganization of the service. Mr. Moore, being on the markets during the arrival of the heaviest of the Canadian apple shipments, was enabled to gather much useful

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information respecting conditions which affect the sale of apples on the Old Country markets, particulars of which will be found in appendix II.

Mr. A. W. Grindley, chief cargo inspector at Liverpool, died on June 21, 1913. Mr. Grindley had filled this position very acceptably since 1901 and had succeeded in identifying himself closely with the Canadian produce trade in the United Kingdom. Owing to other changes in the service, I recommend that this office should not be refilled.

Mr. Wm. Carter, cargo inspector at Liverpool and Manchester, died on January 2, 1914. Mr. Carter has been employed about eight years, during which time he rendered excellent service. Mr. P. J. Gabler, of Liverpool, has been appointed as successor to Mr. Carter.

BROKEN CHEESE BOXES.

In my last report I referred to the large percentage of cheese which arrive in Montreal in broken boxes, and which eventually reach the United Kingdom in a very dilapidated and damaged condition. Many new boxes are placed on the cheese by Montreal exporters to replace those which are broken beyond repair, while others are tied up with cord to hold the broken parts together. By the time the shipments reach the Old Country still further damage is sustained and the general appearance is discreditable and prejudicial to the sale of the cheese.

A large expenditure is incurred by the exporter in the coopering and renewing of boxes, and this expense is, of course, included with other 'costs' of handling the cheese and it eventually comes out of the producer by reducing the price of cheese to that extent.

The breakage would be less if those who order the boxes were careful to see that they fitted the cheeses snugly, and much damage in transit would be avoided by more careful loading and stowing in the cars. The remedy seems to lie in the substitution of a stronger package for the flimsy box now in use. It is true that the boxes are not as strong now as they formerly were, but the increasing scarcity of suitable timber and consequent advance in price of box material stand in the way of much improvement in the box itself.

Some interest having been shown in the possibility of adopting the New Zealand cheese crate, which was illustrated in my last report, I arranged to have several sample crates sent out from London. These were shown at the various dairy conventions in Ontario and Quebec during the past winter. Some of the exporters have expressed themselves as being favourable to the New Zealand crate, while others are inclined to oppose any change in the style of the Canadian package. There has always been objection to innovations in the dairy trade. The square box for butter was very strenuously objected to when it was first introduced. The paraffining of cheese was condemned on all hands, and yet to-day there are very few cheeses which go into storage for any length of time that are not paraffined, and the square butter box is all but universally used. Importers in Great Britain, especially those in London, where the great bulk of the New Zealand cheese is handled, are generally quite favourable to

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the use of the New Zealand crate for Canadian cheese. In Liverpool and other centres some of the merchants think that Canada would lose something by giving up the distinctive package. I am of the opinion that there would be very little permanent disadvantage to the industry by the adoption of any other suitable style of package. The character of the wood which would be used for Canadian crates would distinguish them from those made in New Zealand. I am not aware that Canadian cheese ever lost anything by being shipped to the United Kingdom in the same style of package as that which was used for United States cheese. As a matter of fact, the Canadian cheesemakers got the idea of the veneer cheese box from the United States. The New Zealand crate has the very decided advantage that it will carry the cheese without breaking and at present prices, the crate which holds two cheeses would cost just about the same as two boxes. If the price of boxes continues to advance as it has done for the last two or three years, the crate will soon be the cheaper package of the two. Manufacturers of cheese-box stock claim that in five or six years the supply of elm, which is the only timber suitable for veneer, will be practically exhausted.

THE FRUIT DIVISION.

The reorganization of the fruit inspection service as carried out in 1912-13 has proved to be very satisfactory. The district inspectors have been given more authority, which makes it possible for them to deal more promptly with violations in their respective districts. Two additional sub-districts with inspectors over each were established in Nova Scotia during the year, one in Cape Breton and the other in the fruit-growing districts in Lunenburg county on the south shore. Otherwise the assignment of inspectors was similar to that reported last year.

THE MARKETING OF GREEN IMMATURE FRUIT.

Complaints are still very common as to the quantity of fruit of different kinds which is marketed in a green, immature condition. There is no doubt that this practice is detrimental to the best interests of the fruit trade and has a tendency to discourage the consumption of fruit in many quarters.

APPLE-PACKING DEMONSTRATIONS.

The demand for instruction in the packing of apples in boxes was greater than ever during the past year, and Mr. P. J. Carey, the expert employed to give instruction in fruit packing, was kept busy during the season in various localities of Eastern Canada.

THE FRUIT CROP REPORT.

The Fruit Crop Report was published monthly from May to September as in former years.

BULLETIN NO. 34.

Although the publication of Bulletin No. 34, entitled "Modern Methods of Packing Apples and Pears" was started during the previous year it was not issued

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until after the first of April. This was practically the last work done by the late Mr. McNeill before he was laid up by the illness which proved to be his last. There has been such an unusual demand for this bulletin that a second edition is now in the hands of the printer.

THE LATE ALEXANDER MCNEILL.

The branch lost, during the year, one of its most prominent and useful officers in the death of Mr. Alex. McNeill, chief of the Fruit Division since 1905. After a long and distressing illness Mr. McNeill died on December 14, 1913, much regretted by his fellow-workers and by a very large circle of friends. For years Mr. McNeill performed his duties regularly under physical disabilities that would have put most in bed. His cheerfulness and energy under the circumstances were remarkable. As chief of the Fruit Division, Mr. McNeill did much valuable work in the interest of fruit growing in this country. His service was of the unselfish kind which perpetuates itself.

SEPARATION OF THE FRUIT DIVISION.

I venture to express the hope that you will see your way clear, at an early date, to relieve me of the responsibility for the Fruit Division, in accordance with my formal request made in December last. The rapid extension of the activities of this branch during recent years would seem to justify a further division of work. There is plenty of scope in connection with Dairying, Extension of Markets and Cold Storage Divisions for one man's whole time and abilities, and I feel sure that a Fruit Branch under the direction of a capable man who would devote his whole time to it, would advance to increased usefulness.

STATISTICS OF FRUIT INSPECTION.

The details of inspections, prosecutions, convictions, &c., along with other matters of interest relating to the work of the Fruit Division will be found in appendix III. I am indebted to Mr. F. H. Grindley, technical assistant in the Fruit Division, for much of the work of preparing the report for the division.

COLD STORAGE.

COLD STORAGE SUBSIDIES.

The Cold Storage Act (1907) which provides for the payment of subsidies to public cold storage warehouses, under certain conditions, to the extent of 30 per cent of the cost, has encouraged the erection of small cold stores at country points. In this way, storage facilities are provided as near as possible to the point of production, and the goods are placed in cold storage with the least possible loss of time or chance for deterioration. These local warehouses tend to prevent the accumulation of large quantities of perishable produce in the main centres of distribution, and

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the writer believes that there is no surer or more satisfactory way of providing against a manipulation of prices by an unfair use of the cold storage industry in holding perishable foods of seasonal production.

The main advantage, however, in having local cold storage warehouses at points of production is that such a plan enables the producer or dealer to place his perishable goods in safe keeping with the least possible delay. They can be transported to consuming centres at a more favourable season of the year, or in any case in large enough quantities to permit of carload shipments and the use of refrigerator cars. The movement of produce, from the producer of small lots to dealers or consumers at distant points, must be carried out in many cases in less-than-carload lots and, therefore, without the protection afforded by the iced car.

The prejudice which exists in some quarters against cold-stored foods has its root very largely in the fact that these foods are often out of condition before they reach the warehouse. The local cold storage helps to prevent such conditions from arising.

Since the passing of the Act in 1907, thirty public cold storage warehouses have been erected and received the subsidy, with a total refrigerated space of nearly 5,000,000 cubic feet, practically doubling the refrigerated space for public use which was then available.

Warehouses were completed and put into operation during the year at Port Hawkesbury, N.S., Penticton, B.C., Edmonton, Alta., and Vonda, Sask.

Further contracts have been entered into for the payment of subsidies on warehouses to be erected at Lethbridge, Alta., and Saskatoon, Sask.

For a complete list of all subsidized cold storage warehouses see Appendix VII.

CREAMERY COLD STORAGE BONUSES.

The bonus of \$100 given to creameries to assist in the erection of suitable refrigerators was secured by 39 applicants out of a total of 110. Those who failed to receive the bonus had themselves to blame for not complying with the conditions.

ICED CAR SERVICE.

The iced car services for butter and cheese and for fruit intended for export in cold storage were continued by arrangement with the railways, as in former years.

THE THIRD INTERNATIONAL CONGRESS OF REFRIGERATION.

I had the honour to be with the official delegate from Canada at this important gathering. The foreign delegates met in New York during the week beginning Monday, September 8. Preliminary meetings were held, and a number of the principal refrigerating installations were inspected. On September 14, the delegates left by special train for Washington, D.C. On Monday the 15th, the formal opening of the congress took place in the Auditorium of the National Museum, under

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the presidency of Dr. Frank W. Gunsalus, director of the Armour Institute, Chicago. The delegates were welcomed on behalf of the United States Government, by the Hon. W. J. Bryan, and your representative was called upon to respond for Canada, as were also the other official delegates for their respective countries. In the evening an official reception was held in the beautiful Pan American Union building. This function was attended by a large number of ladies and gentlemen from diplomatic and official circles. On Tuesday morning the delegates were received by President Wilson at the White House, after which they proceeded to Chicago by two special trains. Arriving in Chicago the next morning the serious business of the congress was begun without delay.

The proceedings were conducted in six sections, at which over 200 papers were presented, dealing with the many different applications of refrigeration. The writer was elected one of the honorary presidents of the third section.

Over 800 delegates were registered, and the following countries were represented officially: Austria, Argentina, Australia, Belgium, Brazil, Canada, China, Chili, Denmark, France, Germany, Greece, Honduras, Holland, Italy, Japan, New Zealand, Norway, Paraguay, Russia and Sweden.

The American Association of Refrigeration had charge of all the details and arrangements for the congress. The officers deserve great credit for the admirable manner in which the business was managed.

STAFF IN 1913-14.

The total number of employees in this branch, in the outside and inside service, including temporary clerks and temporary fruit and cargo inspectors, was 157, an increase of 10 over the previous year. In the inside service there were 8 technical officers and 27 clerks and messengers.

The outside staff numbered 122 persons employed as follows:—

Employed by the year.

- 1 Assistant Dairy Commissioner, J. C. Chapais.
- 5 dairy experts.
- 4 inspectors of dairy products.
- 5 district fruit inspectors.
- 1 demonstrator in fruit packing
- 8 permanent fruit inspectors.
- 3 special fruit inspectors (Customs officers).
- 1 chief cargo inspector, Montreal.
- 1 cargo inspector (Montreal, and Portland, Me.)
- 1 chief cargo inspector in Great Britain.
- 4 cargo inspectors (at London, Bristol, Liverpool and Glasgow).
- 23 dairy recorders.
- 2 stenographers.—59.

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Employed for different periods up to seven months.

35 temporary fruit inspectors.

10 helpers to fruit inspectors.

7 cargo inspectors.

4 iced car inspectors.

7 assistants at dairy stations.—63.

GENERAL.

MEETINGS.

The usual number of meetings have been addressed by several members of the staff who are from time to time assigned to that duty.

PUBLICATIONS.

The following publications have been added to our list during the year:

Bulletins.

39. List of Cheese Factories, Creameries, Condensed Milk and City Plants, &c., in Canada. (Supersedes No. 31.)

40. The Inspection and Sale Act, Part IX. (The Fruit Marks Act as amended in 1907-08 and 1912-13), with Regulations.

41. Cheese Factory and Creamery Plans with Specifications.

Circulars.

8. Apple Dealers in Manitoba, Saskatchewan, Alberta and Northern Ontario.

9. Amendments to the Inspection and Sale Act Part IX in 1913.

10. Notes on Cow Testing.

Fruit Crop Reports.

A monthly Fruit Crop Report was issued from May to September (5 numbers).

CORRESPONDENCE.

There has been a very noticeable increase in the correspondence of the office during the past year. It covers rather a wide range of subjects, related to the dairying industry, the fruit trade and cold storage.

ACKNOWLEDGEMENTS.

I again have pleasure in testifying to the good work done by members of the staff. I wish particularly to acknowledge the valuable assistance rendered by Mr. F. H. Grindley and Miss K. B. Robinson, of the Fruit Division, during the illness of Mr. McNeill.

I have the honour to be, sir, your obedient servant,

J. A. RUDDICK,

Dairy and Cold Storage Commissioner.

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APPENDIX I.

REPORT OF THE ASSISTANT DAIRY COMMISSIONER, MR. J. C. CHAPAIS.

SAINT-DENIS (EN BAS) COUNTY OF KAMOURASKA, QUE.

I beg leave to present my twenty-fourth report as Assistant Dairy Commissioner, which covers the period of twelve months between April 1, 1913, and March 31, 1914.

SUMMARY OF WORK.

In submitting a summary of my work during the year 1913-14, I will first draw your attention to the fact that to my duties as Assistant Dairy Commissioner have been added this year those of officer for carrying out the provisions of "The Agricultural Instruction Act" in so far as the same affect the province of Quebec. This will explain why I have had to devote a good deal of my time to the fulfilment of those new functions, this having consequently brought a diminution in my usual lecturing trips and my ordinary work concerning dairying.

In the provinces of Ontario and Quebec, I have, during the last twelve months made, in sixteen counties, thirty-nine visits in twenty-three localities. I have delivered forty-seven lectures before three thousand eight hundred and eighty-six persons, of whom one hundred and five were butter and cheesemakers. The average attendance at those lectures was eighty-two persons. Of the twenty-three localities visited, three of them were visited for the first time. I have travelled eight thousand and sixty-six miles to perform my work.

The following is a list of the counties and the localities visited and lectures delivered with reference letters indicating the purpose of the meetings thus attended.

TABLE OF VISITS AND LECTURES.

Counties.	Localities.	Visits.	Lectures.	Letters of Reference.
Province of Ontario.				
Lincoln	Grimsby	1		a
Ottawa	Ottawa city	1	1	a
Toronto	Toronto city	1	2	a
Wellington S. R.	Guelp	1	1	a
Province of Quebec.				
Brome	Sutton	2	3	b, c, g
Compton	Cookshire	1	1	c
	Waterville	1	1	d, f
Jacques-Cartier	Macdonald College	1	2	a
	"		2	a, e
Kamouraska	Saint Denis	2	2	c
	Saint Pacôme	2	1	b
	Saint Paschal	1	3	a, g
	"	3	2	b
	Sainte Anne de la Pocatière	2	2	b, f
	"	1	1	a
Lake St. John	Roberval	1	1	b
Montreal	Montreal city	1	1	a
Quebec	Quebec city	5	5	a
Richmond	Asbestos	1	1	c
	Danville	1	1	c
	"		1	c, e
	Windsor Mills	1	1	c
Rouville	Rougemont	1	1	a
	"		1	a, e
Stanstead	Magog	1	1	c
	Stanstead	1	2	b, g
Temiscouata	Rivière-du-Loup	1	1	a
Two Mountains	La Trappe, Oka	2	3	a, g
16	23	39	47	

- Reference letters indicate:
- (a) Federal and Provincial Meetings.
 - (b) County and District Meetings.
 - (c) Farmers' Club Meetings.
 - (d) Parish Meetings.
 - (e) English Lectures.
 - (f) Factory inspections.
 - (g) Visits in Colleges and Schools.

The above given table shows that I have attended twenty-one federal and provincial meetings, eleven county and district meetings, eight Farmers' Club meetings, one parish meeting, that I have delivered four lectures in English, that I have made two factory inspections and that I have delivered nine lectures in colleges and schools.

FEDERAL AND PROVINCIAL MEETINGS.

The first provincial meeting attended during the last twelve months was the annual convention of the Agricultural Missionaries of the Province of Quebec, held at Sainte Anne de la Pocatière, Kamouraska county, on July 15 and 16. I delivered before that convention a lecture entitled 'The Dying Land' (La terre qui meurt). The second one was a gathering of one hundred sisters from various convents congregated at the Normal Domestic Science School of Saint Paschal, Kamouraska county, in

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August, taking a post graduate course, and before which I delivered three lectures on 'Weeds,' 'Noxious Insects' and 'Fruit Growing,' on August 14. The third one was the fiftieth annual meeting of the Ontario Entomological Society, held at Guelph and Grimsby, Ont. I was appointed a delegate to attend that convention by the Quebec Society for the Protection of Plants. It was held on August 27, 28, and 29. The fourth one was the summer convention of the Quebec Pomological Society held at Rougemont on September 8, and before which I delivered a lecture on 'A new Emulsion both Insecticide and Cryptogamic.' The fifth provincial meeting attended was held at Quebec, where I was invited by the Honourable Mr. Caron, Provincial Minister of Agriculture, on September 11, to discuss the best means of introducing agricultural science in the secondary schools of the province. The annual convention of the Quebec Dairymen's Association held at Rivière-du-Loup, Temiscouata county, on the 2nd and 3rd of December, was the next provincial meeting I attended. Before it I delivered a lecture on 'Bovine Tuberculosis.' On March 24 and 25 I attended a federal convention of all the provincial authorities of the Dominion who are interested in carrying out the dispositions of the 'Agricultural Instruction Act.' The eighth provincial convention attended was the annual convention of the Quebec Society for the Protection of Plants held at Macdonald College, Jacques Cartier county, on March 26, and before which I made a report of my trip as that society's delegate to the fiftieth convention of the Ontario Entomological Society, and I also delivered a lecture on 'The White Cystopus.'

Besides these eight conventions, I have had to make several trips to Ottawa, Quebec and Toronto to meet, on official business and interviews, the Honourable Federal Minister of Agriculture, the Federal Dairy and Cold Storage Commissioner, Mr. C. C. James, Federal Agricultural Commissioner, the Deputy Minister of Agriculture of Ontario, the Honourable the Minister and Deputy Minister of Agriculture of Quebec, to attend the Quebec and Toronto Exhibitions, to visit the Montreal Laval Veterinary School, the Oka Agricultural Institute, the Agricultural School at Sainte Anne de la Pocatière, etc.

COUNTY AND DISTRICT MEETINGS.

I also attended nine county and district meetings. Two of them were held at Sainte Anne de la Pocatière, Kamouraska county, one on the 15th of April, to complete the organization for the establishment of a demonstration orchard, and one on the 16th of January, being the annual meeting of the Kamouraska Agricultural Co-operative Society, before which I delivered a lecture on "A Progressive Horticultural Society," being the history of the Kamouraska County Horticultural Society. Two others were held at Saint Pacôme, Kamouraska county, being meetings of the board of directors of the Kamouraska Horticultural Society. On the 25th of September, I attended at Saint Paschal the exhibition of the Kamouraska County Horticultural Society, where before a meeting of over one thousand persons, I delivered a lecture on "The Importance of Horticulture and Fruit Growing." At the same place, I attended two other meetings, one of the board of directors of the Kamouraska Horticultural Society and the other the annual convention of the same society held on February 3, before which I delivered an address on the operations and progress of that society since its opening in 1908. On October 23 and 24, I attended at Roberval, Lake St. John county, the fiftieth anniversary of religious profession of Sister Saint Raphael, the founder of the first Domestic Science School of America, opened at Roberval in 1882. I prepared for that occasion an historical sketch of that institution. The two last district meetings attended during the year were those held at the Stanstead and Sutton Domestic Schools, respectively on February 11 and 13th. I delivered at each place two lectures, one on "What is the object of Domestic Science Schools," and one on "The Principles of Domestic Economy."

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LECTURES BEFORE FARMERS' CLUBS.

As usual I delivered lectures before Farmers' Clubs in the province of Quebec, but much fewer than usual for the reasons mentioned at the beginning of this report. The ten lectures I delivered this year were given before the Farmers' Club of Sutton, Brome county; Cookshire and Waterville, Compton county; Saint Denis, Kamouraska county; Asbestos, Danville and Windsor Mills, Richmond county; and Magog, Stanstead county. The subjects of the lectures were: "Corn Culture," Fruit Growing," "Our Sins as Dairymen," "Principles of Rural Economy," "Dairy Husbandry."

FACTORY INSPECTIONS.

I have made only two factory inspections this year, one at the newly-built cheese and butter factory of the Agricultural School of Sainte Anne de la Pocatière, Kamouraska county, which is a fine substantial building equipped with first-class apparatus, and one at Waterville, Compton county, a butter factory running the whole year.

VISITS TO SCHOOLS AND COLLEGES.

While I was making my various lecturing trips and visits, during the last twelve months, I visited four agricultural colleges and schools, and four domestic science schools. The agricultural colleges and schools were those of Guelph, Ont., Oka, Macdonald, Sainte Anne de la Pocatière, and the domestic science schools were those of Roberval, Saint Paschal, Stanstead and Sutton. I delivered nine special lectures at these institutions.

OFFICE WORK.

On account of the new duties assigned to me in connection with the "Agricultural Instruction Act," I have had to perform more office work than usual. Besides that new work, I had to perform about the same amount of office work as Assistant Dairy Commissioner as formerly, to prepare my lectures for my own meetings, to write articles for the agricultural press, and to answer the inquiries of my correspondents.

I append here a list of the papers and lectures that I have written during the last twelve months, in French (F) and in English (E).

- Notes on Dairying in New Zealand, F.
- Preservation of Wood Lots on Farms, F.
- Ground Phosphate as Fertilizer, F.
- Death of Dr. Gustave de Laval, F.
- Effective Cream Separation, F.
- Fodders and Cattle, F.
- Causes having an Influence on Butter Composition, F.
- Complementary Fertilizers, F.
- The Work of the Quebec Agricultural Missionaries, F.
- Butter Model, F.
- Canadian Butter and the Hand Separator, F.
- Wild Mustard. Sun Spurge, F.
- Honey, Its Granulation, Its Analysis, F.
- Summer Convention of the Quebec Pomological Society, F.
- New Zealand Butter in Canada, F.

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A New Emulsion both Insecticide and Anticryptogamic, F. and E.
Bovine Tuberculosis, F.
Notes on Blueberry Culture, F. and E.
Dairying in Canada, F.
Beef Cattle, Dairy Cattle, F.
New and Old Seeds, F.
A Progressive Horticultural Society, F.
Dairy Chronicle, F.
Historical Sketch of the Roberval School of Domestic Science, F.
A Talk on Chemical Manures, F.
New Discoveries Concerning Milk, F.
The White Cystopus, F. and E.
Report as Delegate to the 50th Convention of the Ontario Entomological Society, F. and E.

CLOSING REMARKS.

In closing I have only one thing further to add. I have observed lately while making a lecturing tour in the Eastern Townships, that there is a strong tendency amongst many dairy patrons to yield to the temptation of selling milk and cream to Americans, as well as some of their dairy cattle on account of the recent change in the United States tariff. This has already caused the closing of a few factories and may injure the interests of some of the factory owners and butter and cheesemakers of the many localities in the vicinity of the boundary line in eastern Ontario and Quebec.

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APPENDIX II.

REPORT OF W. W. MOORE, CHIEF, EXTENSION OF MARKETS DIVISION.

SIR,—I have the honour to present herewith the report of the Extension of Markets Division for the year ending March 31, 1914.

CHEESE TRANSPORTATION.

As a result of investigations made during the cheese-shipping season in 1912, it was found that the cause of the major portion of the breakage in boxes shipped from country points to Montreal was due to the fact that in loading the cheese in the cars sufficient care was not taken to stow the boxes closely so that they could not knock about in transit, or while the cars were being shunted.

Following up the letters sent from this office to individual shippers in 1912 and the circulars issued at our request by the railway companies to their agents instructing them to supervise the loading of cheese as far as they possibly could, the following letter was published in all the newspapers printed in the cheese-producing sections in eastern Ontario and Quebec and a copy was also mailed direct to each cheese factory in the above territory:—

DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE.

DAIRY AND COLD STORAGE COMMISSIONER'S BRANCH.

OTTAWA, May 21. 1913.

An Open Letter to Patrons of Cheese Factories, Cheesemakers and Factory Owners.

In the early part of the summer of 1912, complaints were received by this Department from Montreal cheese merchants to the effect that the proportion of broken boxes among the consignments of cheese they were receiving by rail from points in Quebec and eastern Ontario was much greater than usual and an inspector was at once assigned to duty at the railway terminals in Montreal in order to check the condition of the boxes as they were delivered from the cars. A travelling inspector was also sent out to investigate the manner in which cheese were handled and loaded at country shipping points. All car-load shipments are loaded by the men who draw the cheese from the factory. The inspectors found that the cause of probably 90 per cent of the breakage was due to the fact that, in loading the cheese, care was not taken to stow the boxes closely so that they could not knock about or fall down in transit and especially during shunting operations. The inspectors reported that it was a common practice to pile the cheese high in each end of the car with a vacant space across the centre into which the boxes pitched at the first heavy jolt the car received.

Wherever it was possible the inspectors reported the names and addresses of the shippers in whose lots considerable breakage was found, and letters were sent to them from this office urging more care in loading the cars. At our request both the Canadian Pacific and the Grand Trunk Railways issued

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circulars to their agents instructing them, so far as their duties would permit, to supervise the loading of cheese. As a result, during the latter part of the season there was noticeable improvement in car stowage with a consequent reduction in the proportion of broken boxes, and this year we hope to see a much greater improvement.

As a rule the cheese are hauled to the railway stations and loaded in the cars by patrons of the factory; in other words by the men in whose interest it is that the cheese should reach the market in first-class condition. Now, if these men will not take the trouble to load their own cheese in the cars so that the boxes will remain intact and their contents uninjured, how can we expect anything better from railway and steamship employees?

Broken boxes result in damaged cheese, and damaged cheese means lower returns to patrons because, in the final analysis, all losses caused by poor condition or inferior quality are shouldered by those who produce the milk.

We therefore earnestly ask all patrons, factory owners and cheesemakers to pay close attention to the shipping of their cheese and especially to guard against loose, haphazard piling of boxes in the cars.

J. A. RUDDICK,
Commissioner.

W. W. MOORE,
Chief, Markets Division.

During the season of 1914 we hope to find considerable improvement in the condition of the boxes as they are unloaded from the cars at Montreal.

REFRIGERATOR CARS FOR CHEESE.

Under the usual arrangement with the railroad companies the department paid the cost of supplying two tons of ice to 1,145 refrigerator cars carrying cheese to Montreal and Quebec for export. The period covered was from June 16 to September 6, and the total payment amounted to \$5,724.

REFRIGERATOR CARS FOR FRUIT.

An arrangement similar to that in effect for cheese was in force from the 1st of August to the 1st of October for shipments of early apples and tender fruits in carloads consigned to Montreal and Quebec for export in cold storage. Less than fifty cars were shipped, and the total disbursement by the department was \$206.50.

BUTTER TRANSPORTATION.

From May 12 to October 11 special refrigerator cars were run weekly over the railroads in Ontario and Quebec for the carriage of butter at less than carload rates under a special guarantee of earnings from this department. These cars carried butter to London, Hamilton, Toronto, Ottawa, Montreal and Quebec. A car was also run weekly in Nova Scotia over the Dominion Atlantic railway from Yarmouth to Halifax. The total cost of this service to the department was \$9,900.

INSPECTION OF BUTTER CARS.

Three refrigerator car inspectors were employed at Montreal and one at Toronto during the period in which the special butter cars were in operation. The total tonnage in the cars reported by the Montreal inspectors was approximately twenty-two and a half million pounds of butter and the average temperature of the butter as it was discharged from the cars was about 53 degrees. Over four million pounds of butter was carried in the cars reported by the Toronto inspector, while the average temperature of the butter was slightly under 56 degrees.

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FARM PRICES.

Excepting the information furnished by each decennial census there are no statistics of the prices received by producers of farm products in Canada whereas in the United States for a number of years past, information of this character has been collected and published by the Federal Department of Agriculture. As this Branch has now a large number of dairy recorders stationed in various parts of eastern Canada, whose duties require them to visit the farmers in their districts regularly every month, it is obvious that a splendid opportunity here exists for a systematic collection of farm prices which should prove of considerable value. With this end in view schedules have been prepared and sent to each recorder to be returned the first of each month, showing prices received by the farmers for a certain list of products and a summary of these farm prices will appear in next year's report.

CARGO INSPECTION SERVICE.

During the past fiscal year the cargo inspection staff has consisted of six men at Montreal and one at Quebec for seven months, four men in Great Britain and one at Halifax the year round, and one at Portland, Maine, for five months. At the ports of St. John and Vancouver the fruit inspectors have acted as cargo inspectors as well.

THERMOGRAPH RECORDS.

In the past year, 560 records of temperature were obtained in steamers sailing from Montreal and Quebec, and 76 records in steamers sailing from Halifax. These records were obtained in cold storage chambers, cooled air compartments and in ordinary holds, and cover apples, pears, peaches, cheese, bacon, meats, etc. In some of the ships, carrying large perishable cargoes, as many as eight thermographs were placed. Over thirty-seven hundred copies of these records were made in this office.

Next season it is intended to increase the number of these instruments with fruit shipments out of the port of Halifax in order that more complete records may be obtained of the temperatures in the different holds of steamers carrying large cargoes of apples to British ports.

TRIP TO GREAT BRITAIN.

The month of November was spent by the chief of this division in Great Britain looking into the work of the cargo inspectors and getting first-hand information regarding the condition in which Canadian agricultural products were landed at the different ports, market requirements, etc. Special attention was paid to fruit shipments as apples were then arriving from Canada in large quantities. The storage accommodation on the docks and the facilities for discharging Canadian cheese and other perishable produce at the principal ports were examined and the cargo inspection service was reorganized to a certain extent so as to better cope with the existing conditions.

THE CANADIAN CHEESE TRADE.

In London and Bristol a good many complaints were made regarding short weight in shipments of Canadian cheese, and the custom of shipping 'green' or immature cheese was roundly condemned. In Glasgow the writer was informed that the cheese made in Prince Edward Island in 1913, which are largely shipped to the Glasgow market, were not up to the standard of former years in regard to quality. The leading importers in Glasgow spoke highly of Prince Edward Island cheese and claimed that it more closely resembled Scotch Cheddars than cheese made in any other part of Canada.

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On the whole, Canadian cheese was well spoken of and most of the importers interviewed spoke in a tone of regret of the decreasing supply from Canada.

BROKEN BOXES.

In all the markets visited the fact that so large a proportion of the cheese boxes arrived in a badly broken condition was commented on, and it seemed to be the general opinion that the poor condition of the boxes on arrival in Great Britain means a depreciation of about one-quarter of a cent per pound on Canadian cheese, which is certainly a serious item. In London the majority of the import firms spoke highly of the crate holding two cheese such as is used by New Zealand and did not voice any particular objection to the use of a similar package for Canadian cheese. As London is the principal market for New Zealand cheese the porters in the warehouses there are accustomed to handling the crate, and they have become very expert in opening and closing these packages for weight testing purposes. In Liverpool, Bristol and Glasgow where New Zealand cheese are not so much in evidence a preference was usually expressed for the Canadian type of box. It was generally admitted, however, that so far as carriage is concerned the crate is the stronger and therefore the safer package.

DECREASING IMPORTANCE OF LIVERPOOL AS A CHEESE CENTRE.

A very noticeable tendency in the import cheese trade in England is the decreasing importance of Liverpool as a market for Canadian cheese. A few years ago Liverpool was considered to be the principal market for cheese made in this country but this pre-eminence has been gradually shifting to London which is now looked upon as headquarters for the whole import cheese trade.

LONDON THE WORLD'S MARKET.

It is generally recognized that London is the financial centre of the world, its premier port and greatest market. As a local market its food consumption is enormous, there being seven and a half million people (about the total population of Canada) within a radius of ten miles from the centre of the city. As a distributing point it is excellently served by nine trunk lines of railway, all with direct rail connection with the docks, and it has also regular steamship services to various Continental and British ports.

FRUIT SELLING SYSTEMS.

Within twelve months one million barrels of apples are received in London from overseas, besides large quantities of home-grown apples. The imported apples are sold by means of two systems, namely, by auction and by private sale (or "private treaty" as it is termed there). The auction sales are conducted at the Covent Garden market, Borough market and Spitalfields market. At Covent Garden the auctions are held on Mondays, Wednesdays and Fridays. The best day is Wednesday, as there are more out-of-town buyers present, while the poorest day is Friday. At the other two markets the sales are held on Tuesdays and Thursdays.

All imported apples are removed from the dock and stored in private warehouses, whereas in Liverpool only samples are taken from the dock and it is there that the buyer takes delivery.

One bad feature of the auction system, as conducted in the Floral Hall, Covent Garden, is the fact that a number of sales (three, four or five) may be going on at once, so that the buyers present are split up into groups and the number in attendance at one sale may not be sufficient to afford proper competition and the apples

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may thus be sold below their value. An infinitely better plan is followed in Liverpool and Glasgow where the buyers are all assembled together and the brokers occupy the one rostrum in rotation, each being allotted so many minutes. Under present conditions some system of auction seems indispensable in the large centres in Great Britain, but so far as London is concerned there is certainly room for improvement in the manner in which the sales are carried on in the Floral Hall, Covent Garden.

Sale by private treaty is all right if all the money realized by the broker is returned to the shipper which, of course, is largely a question of the honesty and business integrity of the broker. For fruit of good quality and in good condition, private sale has certain advantages, but for out-of-condition stock which should be disposed of quickly, the auction method seems preferable.

It is well to have both systems in use as there is naturally strong competition between the auctioneers and the private salesmen, each trying to do as well as possible to avoid losing business to the other.

DOCK AND LANDING FACILITIES.

The Allan and Cunard-Thomson steamers from Montreal, and the Furness Line steamers from Halifax, land their apples at the Surrey Commercial dock, which is situated about $5\frac{1}{2}$ miles from Covent Garden market, about $3\frac{1}{2}$ miles from Spitalfields and about 3 miles from the Borough market. Cartage from the dock to these markets costs from 6 to 8 cents per barrel.

The apples are discharged from the steamers with reasonable care and are wheeled on trucks into the dock shed where they are sorted and piled to marks. From here the apples are taken to the various warehouses by horse teams and motor trucks, the former taking about 50 barrels and the latter about 60. One large firm, with its warehouse located on the river side, transfers its apples by barge.

CONDITION OF NOVA SCOTIAN APPLES THIS SEASON.

The condition of the Nova Scotian apples landed in London during the past autumn was distinctly bad, especially those *ex* steamers *Almeriana* which sailed October 10, and arrived the 22nd, *Shenandoah*, which sailed October 18 and arrived the 29th, and *Rappahannock*, which sailed October 30 and arrived November 13. The first-named steamer had about 17,000 barrels, the second about 29,000 and the third about 25,000, a grand total of 71,000 barrels.

It is difficult to estimate the total loss incurred on these three shipments, but it is probable that the amount involved would pay the interest for a number of years on a large sum of money invested in cold storage warehouses in the Annapolis valley. With the warm humid days and nights experienced last fall, conditions were very favourable for quick ripening and development of spot on the apples. It was found impossible to cool the warehouses, and the only thing to do was to rush the apples away to market as fast as possible. It is difficult to imagine, however, the heat that would be generated by the ripening processes of 20,000 barrels of apples, stowed together in a ship, that were loaded at a temperature of from 60 to 70 degrees. The ordinary ventilating fans would be powerless to lower the temperature of such a mass of fruit, packed in tightly-closed barrels, and after between two and three weeks of these conditions a grower wouldn't recognize his own apples if he saw them turned out of the barrels. Similar climatic conditions might not occur again for years, but a repetition one year in five would make preventive measures every year worth while. The remedy, it seems to me, is general cold storage facilities in the apple-growing section of Nova Scotia so that the apples can be stored at a controlled temperature soon after they are picked from the trees.

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REPUTATION OF NOVA SCOTIAN APPLES IN GREAT BRITAIN.

In the past two seasons Nova Scotia has exported a large quantity of No. 3 grade apples, with this unfortunate but inevitable result that in the markets of Great Britain, Nova Scotian apples are looked upon as 'cheap' apples, and buyers expect to get them for less than they are willing to pay for apples from Ontario, Virginia, New York state, the western Pacific states or from British Columbia.

COMPETITION OF ENGLISH GROWN APPLES.

In the London market particularly, Nova Scotian apples are exposed to strong competition from English grown apples in the three months' period preceding Christmas. The latter are not graded or packed, but are simply poured into bushel baskets 'tree run' and marketed that way. On an average they sell for from 75 cents to 85 cents a bushel or about \$2.65 per barrel. Some of the Kent growers are using the 40-lb. box and making a fair pack, but when the writer was there the market was flooded with the common stuff in baskets. Nova Scotian number threes are right up against these English apples, and it will be an exceptional season when it will pay to ship this grade to London. There is a future in the apple industry for districts that can grow high grade stuff at a reasonable cost, but none for sections producing a heavy proportion of the lower grades.

A GOOD SEASON FOR CANADAIAN PEARS.

A feature of the import fruit trade in Great Britain last season was the large supplies of Canadian pears, which as a rule realized good prices. The English and French crops were almost a total failure, and supplies from these sources were consequently very light. Unfortunately a considerable proportion of the Bartlett pears shipped from Canada were packed in barrels which is an entirely unsuitable package for this variety and should never be used for either the export or home trade. The Liverpool cargo inspector in his report, which will be found a few pages further on, refers to a loss occasioned by the shipment of Ontario Bartlett pears in barrels, which were condemned on arrival owing to their wretched condition. For the safe shipment of Bartlett pears to Great Britain the following three things are essential: half boxes, refrigerator cars and ocean cold storage. In addition, whenever possible, the pears should be pre-cooled before loading in the cars at the initial point of shipment.

The difference in condition on arrival in England between pears that had been pre-cooled and shipped in refrigerator cars and steamship cold storage and those lacking some or all of these advantages was clearly demonstrated in the case of shipments from the United States, as those shipped under the former conditions arrived in excellent shape, while many of the other consignments were landed in a wasty and damaged condition and were often a total loss.

SHED ACCOMMODATION FOR FRUIT INADEQUATE ON GLASGOW DOCKS.

Shortly after the return of the writer from Great Britain the following letter, which speaks for itself, was sent by the Dairy and Cold Storage Commissioner to the Donaldson and Allan Steamship lines in Glasgow:

OTTAWA, February 27, 1914.

The Donaldson Steamship Line,
58 Bothwell Street,
Glasgow, Scotland.

DEAR SIRS,—My assistant, Mr. W. W. Moore, spent some time in Glasgow last autumn looking into our cargo inspection service, the dock accommodation

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and the facilities for discharging Canadian apples, cheese, etc., at your port. He also interviewed the principal fruit and produce importers and endeavoured to inform himself as thoroughly as possible on all matters connected with the import trade in Canadian farm and food products. As a result of his enquiries he became convinced that the provision of additional dock shed accommodation for the storage of Canadian apples would be a decided improvement. Under present conditions the apples landed from the steamers of the Donaldson and Allan lines have to be removed from the dock at once and carted to the warehouses of the various brokers, a distance of several miles. After the apples are sold they have to be again carted from the warehouse to the railway stations and docks for shipment to various points in Scotland and the north of England. If there was sufficient storage room on the dock, where your steamers berth, so that the apples could be sold ex quay, as in Liverpool, and only samples taken to the sales rooms, there would be less handling of the bulk which would be better for the apples and an advantage to everybody concerned. As you are aware, all the fruit landed in Glasgow by the steamers of the Anchor Line from New York is thus stored and sold. We believe that Messrs, Simons, Jacobs & Co., and other leading firms in the fruit trade, would strongly support the above suggestion and that they would be pleased to discuss the question with you. In the past your company has always shown a willingness to co-operate with this Department in any movement that would tend to protect and develop the export trade in Canadian farm products and I feel sure that you will give this matter your best consideration.

I am writing a similar letter to the Allan Line.

Yours very truly,

J. A. RUDDICK,

Commissioner.

REPLY.

GLASGOW, 13th March, 1914.

J. A. RUDDICK, Esq.,

Dairy and Cold Storage Commissioner,
Ottawa.

. DEAR SIR,—We have to acknowledge your favour of the 27th ult., and all contents will have our careful attention.

Your suggestion is not a new one in the sense that we tried to put a similar arrangement in force a year or two ago, but owing to want of proper facilities being got from the Clyde Trustees, the scheme for selling ex quay fell through.

The writer will be from home for a few days, and on returning will take this matter up with the Allan Line and the Clyde Trust, and see if any further suggestion could be entertained.

You can rest assured we will do everything possible in the interests of the trade, and are,

Yours truly,

DONALDSON BROTHERS, LIMITED,

CHARLES DONALDSON,

Managing Director.

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The Allan Line also acknowledged receipt of the Commissioner's letter on March 13, and stated that they would go into the matter carefully and write again later.

COMPARATIVE PRICES IN CANADIAN, UNITED STATES AND BRITISH MARKETS.

For several years past the annual reports of this division have included comparative wholesale quotations for various food products in the leading markets of Canada, the United States and Great Britain, and I present again this year similar statistics.

OBITUARY.

During the past year two vacancies occurred in our cargo inspection staff in Great Britain caused I regret to say by the death of Mr. A. W. Grindley, chief, cargo inspector for Great Britain, with headquarters at Liverpool, and of Mr. Wm. Carter, inspector for the ports of Liverpool and Manchester. Mr. Grindley died on June 21, 1913, and Mr. Carter on January 1, 1914. In both cases the end came suddenly. Both Mr. Grindley and Mr. Carter had been employed by this Department for many years and had rendered useful and conscientious service.

NEW APPOINTMENTS.

At Liverpool, Mr. P. J. Gabler was appointed to take the late Mr. Carter's place and the position of chief cargo inspector for Great Britain has been abolished. At Glasgow, a change was made at the first of the year by the transference of Cargo Inspector Thomas E. Davis to Canada and the appointment of Mr. J. M. Manson in his place.

REPORTS OF CARGO INSPECTORS IN GREAT BRITAIN.

Following are the annual reports of the cargo inspectors employed under the direction of this branch at Liverpool, London, Bristol and Glasgow:—

REPORT OF THE LIVERPOOL CARGO INSPECTOR.

LIVERPOOL, March 31, 1914.

I beg to submit the following report covering the ports of Liverpool and Manchester.

Owing to the unfortunate deaths of the late chief cargo inspector Mr. A. W. Grindley, and my predecessor, Mr. W. Carter, during the past year, accurate totals of imports of bacon, cheese, eggs and frozen meat, for the purpose of comparison with last year's totals, are not available, but I have been able to get fairly accurate figures for apples and pears.

Receipts of Apples, Liverpool and Manchester.—There have been landed in Liverpool, 232,049 barrels and half-barrels, and 18,344 boxes of apples from Canada, out of a total of 557,048 barrels and half-barrels, and 217,918 boxes, from the United States and Canada combined. Last year the totals were 360,734 barrels and half-barrels and 7,843 boxes from Canada, out of a total of 917,800 barrels and half-barrels and 344,097 boxes from the United States and Canada.

There have also been landed in Manchester, during this season, 33,760 barrels and half-barrels and 520 boxes of Canadian apples.

Receipts of Pears.—Of pears, Liverpool received from Canada 2,291 barrels and 1,395 boxes and half boxes.

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Peaches. I know of one consignment of 865 trays of Ontario peaches, which was landed here, the quality and packing of which was good, but showing a slight waste. Plums and peaches which have been, and are at present, arriving from Cape Colony, South Africa, are of very fine quality, and in excellent condition, and have brought very good prices. It should be possible to get them here in a similar condition from Canada, with similar results.

The Apple Trade.—As I have only been engaged in cargo inspection work for the past two months, it follows that I cannot give an account for the whole year, more especially as the busiest part of the fruit season was over before I commenced, but, as I have been handling Canadian and other apples here for over twenty years, I may be permitted to offer some remarks, and perhaps some advice, based on my experience during that period.

It will be generally admitted that in these days of keen competition, continued improvement is necessary if we are to hold our own or keep ahead, and I would like to call the attention of Canadian packers to the fact that the western New York state people are making a big effort to capture the best of this market. Their fruit is very good quality generally, and very well graded, and they go sometimes to the extent of what may be termed fancy packing in barrels (i.e. fancy paper lace for the face of the barrel, and a pad at top and bottom). These apples easily command top prices.

Some of the best Canadian packers have recently resorted to mixing No. 1 and No. 2 grade apples in the same barrel, presumably with the object of making up lines of No. 1 at the remunerative prices which have for sometime past been obtained. Owing to the good demand, these have passed, but with much comment, and in a full season would have to be sold as 'mixed.'

Careless or Dishonest Packing and its Consequences.—It is to the careless packer, however, that I would call more serious attention, and it would be a good thing if the regulations with regard to these people were more stringent. They seem to lay themselves out to escape the inspector, and they spoil the good work done by the honest packer by getting a bad reputation for the Canadian trade. Many importers and buyers here and in Manchester, having been bitten, are very much against having anything to do with Canadians at all in consequence.

There are some brands which they will not even trouble to open for examination when inspecting others on the quay. I will give you one case out of several which came under my notice during the past season. A parcel of 177 barrels from one packer arrived by the Canadian Pacific Railway Company's steamer, about 40 per cent of which were wrongly marked. They were stencilled 'No. 1' but were also marked in pencil, in amongst the stencilling, as 'No. 2' or 'No. 2 mixed' and in some cases a different variety; some of the No. 2's were also wrongly marked in this way, the variety and grade in pencil invariably being correct. The apples were also of very poor quality, badly mixed below, and landed almost all slack. If these had been handled at night by gaslight, it would have been very difficult to discover these pencil marks, and they would have been sold according to stencil with the subsequent grumbling and claims of the buyers, and also creating a bad impression of Canadian packing generally.

New Port Regulations.—The Liverpool Port Sanitary Authority Inspectors have recently been collecting specimens of apples containing any spots or scale, which are being imported here, with the object of subjecting them to microscopical examination. The specimens particularly wanted are those containing what is variously called, "San José Seab," "San José Scale" or "San José Louse." Up to the present no specimens have been found in Ontario or Nova Scotian varieties, but they have been found in western New York state, Californian and Virginian.

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Germany rejects any parcel imported which is found to contain this pest, and returns them again to the senders, and it is with the idea of doing something similar here, that these investigations are taking place.

As specimens have been found in the western New York State apples, it may handicap, in the near future, one of our greatest competitors.

Good demand for Boxed Apples, Properly Packed.—In my opinion sufficient attention is not given in Canada to the packing of apples in boxes. That there is a good market here for them, when properly packed and papered similar to those from Oregon, is proved by the quantity (given at the beginning of this report) of boxes handled here. If they are properly graded and the size in each box kept uniform (not mixed) and each apple wrapped, preferably in stamped papers, there is no reason why Canada should not participate in this trade with remunerative results.

The numbers most in demand during the greater part of the season are 140's to 200's, but in the beginning of the season any number will do, more especially if they are coloured apples. It has always struck me as strange that soft apples, such as Wolf River, St. Lawrence, Alexander, &c., are not packed in boxes in preference to barrels. The weight of the upper layers leads to the bruising of apples below and the consequent running of juice, making 'wet' and 'slack and wet' selections, and reduced saleable value. These coloured soft apples, arriving as they do in the early part of the season, when coloured apples are wanted, would, I am sure, amply repay any extra care in packing in boxes. The better they are put up, the better will be the result.

In shipping apples for Buenos Ayres, or any other distant place, where more than one handling is necessary, it would be a distinct advantage to have a cord tied around the centre of the box, to insure safe handling and minimize breakage. This is done with any lot bought here for shipment abroad.

Nova Scotian Apples.—This has been a remarkable season for Nova Scotian apples. The third cargo to arrive was a very poor one. I know several people who, having bought some of this cargo, had difficulty in disposing of them at less than half cost, owing to the badly spotted condition of the fruit, and I saw some which were also musty in the middle of the barrel, and simply rubbish. It was unfortunate that they were shipped here at all, as it made the buyers and their receivers very dubious for the rest of the season, regarding Nova Scotians, and they will undoubtedly be very careful with the early shipments in the next season. A new feature has been the introduction, on barrels stencilled No. 3, of a paper label containing the notification that the barrel contains No. 1 fruit in size, but with the defect of being spotted, short of colour, or otherwise defective. They have in most cases brought very good prices, but they did not in all cases merit the distinction of the label. As to the merits or demerits of the practice, it would not be easy to say in a season such as this, when, what in other seasons we would call rubbish, or pig food, has recently brought 12 shillings to 16 shillings per barrel. I am inclined to think, however, that in a full season buyers will not look with any favour on them. The extraordinary prices that have for some time been obtained are the most satisfactory part of an otherwise very moderate season.

A good season for Pears.—The past season has been a very favourable one for pears, owing in great measure to the shortage over here. The quality generally was good, and for anything arriving in satisfactory condition very good prices were obtained. The condition of some of the parcels, however, was very unsatisfactory. To be of any service here, they should arrive in as green a condition as possible, and to risk ordinary storage either at home or in any part of the transit, is not to be thought of. Ordinary stowage on part of the journey is the cause attributed to the faulty condition on

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arrival of some shipments this season, but I have not the slightest hesitation in saying that the greater cause was that they were packed in barrels. The greater weight in a barrel of pears as compared with apples, leads to the less careful handling of pears in transit, and the consequent dropping of the barrels on their sides, causing bruising of the fruit. The more frequent cause of bruising, however, and the cause which most decreases the value is the heavy weight of the upper layers on the bottom ones, which flattens the pears at the bottom of the barrel and they, becoming wasty, leave room for the rest of the fruit to bump about in the barrel at each handling, and in turn become just as bad. Prior to my engagement with the department this season I handled several consignments of 'Bartlett' pears packed for a well-known Ontario apple shipper, some 300 barrels of which were condemned and destroyed. The pears were of good quality and grading, and I attribute the loss mainly to the weight of the pears being packed in barrels. If these had been papered and packed in boxes, they would have brought a correspondingly high price to those which arrived in good condition packed in barrels, with the advantage that all would have arrived in good condition. I would consider it always the best policy to pack pears of any variety in boxes or half-boxes.

There has been a patent box for pears sent to London this season, which I believe has met with great success. I hope we will receive some in Liverpool and Manchester this next season as a test against packing in barrels.

Cheese.—With reference to cheese, many cargoes appear after being landed, to have been roughly handled, whereas the cause is attributable to the package itself, being in many cases too big for the cheese, and in the case of 'twin cheese' (i.e., two small cheese in an ordinary box) there is no support inside the box to prevent the box from breaking, owing to the bumping of the two loose cheese against the side of the box during handling. After conversations on the subject with some of the leading people here, I find that they are greatly in favour of the New Zealand style crate, both for appearance and suitability. I have seen several consignments of New Zealand cheese in crates, which have been landed in London, and handled several times since, without finding one broken or repaired package. If strips of tough wood, essentially without knots in them, are used, I see no better method than this crate to give satisfaction to all concerned.

Bacon.—Bacon is generally landed in good condition, but it certainly would be an improvement if the Canadian cases could be made to fit the contents a little more closely. In many cases there are from six to nine inches vacant space at either end and sides, which allow the contents to bump about during handling, causing the side of the box to bulge out and to eventually break.

No Eggs or Butter from Canada.—As far as I am aware no Canadian eggs or butter landed here this season.

Canned Apples.—For canned apples I have not the total quantity, but the three or four shipments I have seen have been landed in good condition, though in some cases the packages were very frail to stand the weight.

There have also been shipments of frozen poultry, boxes of offal, and tripe in bags which appear to have found a ready market.

Dock facilities.—In the matter of facilities here, there has been considerable improvement during the year, and the subject is at present engaging the attention of a special committee appointed for the purpose, as also for the means of transport from the docks.

Railway trucks now run inside or alongside all the sheds and some cargoes are transferred direct from the ship to them. Motor transport for quick despatch is greatly on the increase, including insulated vans on motor vehicles for refrigerator cargoes.

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The dry-wet branch of the new Gladstone dock has been in use since January 1 this year, thus adding considerably to the available dock space.

There are also three or four more cold storages opened or in the course of erection.

Acknowledgements.—I wish here to thank the officials of the various shipping companies for the courtesy with which they have received me, on taking over this position, and for the assistance they have been willing to afford me. I beg to thank especially the secretary of the Manchester Fruit Brokers, Ltd., who at considerable trouble supplied me with the details of imports of apples for Manchester.

PHILIP J. GABLER.

REPORT OF THE LONDON CARGO INSPECTOR.

LONDON, March 31, 1914

Cheese.—During the year there were 758,805 boxes of cheese received here from Canada, and reports from the larger factors and firms handling this produce, generally speak well as to the quality of the season's make. There have been, of course, occasional complaints, particularly with regard to the immaturity of the cheese from the Quebec districts; also brokers complain of the difficulty of getting coloured cheese of a deep enough colour, despite repeated applications, but in the main the trade regards the quality as having been good, and an improvement upon the previous year.

Boxes.—The number of broken boxes has again been very heavy and there has been no improvement in this respect. As regards the handling here, the quantities discharged at a time from one hold have not been sufficiently large to warrant the working of an elevator-conveyor, and this machine has not been used during the past year; there is no doubt that this mechanical handling greatly reduces the number of boxes broken, in addition to expediting the discharge of cargoes. The boxes from the Listowel and Ingersoll districts have again come to hand in good shape and the cheese has been well boxed, with a minimum of breakage. The stowage in the ships' holds during the season has been generally good and in the absence of labour trouble at the docks the discharging of cargoes has been well carried out.

Smaller Imports from Canada Anticipated.—Many importers here are looking for a reduction in the export of cheese from Canada during the next few seasons, and I understand that some of the larger factories in Holland are commencing to make cheese approximating in size and shape to Canadians instead of the usual form of Dutch cheese, which is globular in shape, with a diameter of about eight inches.

Bacon.—Bacon has come to hand in reduced quantities which have been quickly cleared; the cases have stood the journey well considering the weights they contain and any damages have been made good on the quay-side as soon as landed. An extra band around the middle of cases would help to reduce the number of broken packages.

Apples.—With regard to apples, the season has been an exceptional one in many respects. The fall shipments from Nova Scotia were disappointing, probably owing to the very warm weather experienced in Canada, and the fact that the first arrivals made good prices caused large quantities of English apples to be rushed on the market, and a decided glut resulted.

The English crop held out much longer than was expected, but after the turn of the year prices hardened perceptibly, and it is many years since such good results have been obtained.

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Generally speaking the packing has been an improvement upon the previous year and complaints as to slack packing have been few; the sending from Nova Scotia of 'Labelled No. 3,' i.e. No. 1 in size, but not in quality, was attended with good returns, an average of 2 shillings to 3 shillings extra being made per barrel by these, over the ordinary No. 3's.

It should be noted that English growers are now producing increased quantities annually of good cooking apples, and as the area under these varieties is extending the outlook for green imported apples here is not good.

Pears. The crop of English and French pears was very light indeed, and Canadian and American pears were sent from London to France; as a result in many cases record prices were made here, Bartlett's making up to 50 shillings per barrel and to 5s. 6d. per half box.

Brokers emphasize the necessity of pears landing here in hard, green condition, and of their being sent at all times in cold storage. It is to be regretted that during the past season when prices were so good, several parcels of pears were received in an over-ripe condition.

Peaches. The quantity of peaches received was not large and although a few half-boxes of 36 to 48 fruits made 9 shillings to 11 shillings per package, the general opinion of the trade was not favourable either as to the varieties sent or to the condition on arrival.

The stowage of fruit and barrelled apples and pears has been well done, but constant supervision is necessary to ensure the careful handling of these commodities.

I have to acknowledge the assistance and consideration at all times, of the various officials of the shipping companies both at docks and offices; also of the help given me by the Port of London Authority on many occasions.

A. E. GRIFFITH.

REPORT OF THE BRISTOL CARGO INSPECTOR.

BRISTOL, March 31, 1914.

Cheese.—From the 1st April, 1913, our total imports have been about 313,000 boxes, showing a falling off of about 73,000 boxes. Contrary to expectations, the extreme high prices experienced in the drought year of 1911 have been almost fully maintained on the average since, the only exception being the early part of last year. New Zealand cheese, deliverable from January to July, was contracted for very extensively by the retailers for deliveries for the whole of the period at very high prices, but after the contracts were made the market broke and prices dropped from 69 shillings and 70 shillings for first grade goods to 58 shillings and 60 shillings, and there was every prospect of lower rates ruling all round. One of the large multiple shops, however, within a few days contracted for about 75,000 boxes of cheese at the low prices then ruling, thus practically clearing the markets of available surplus stocks, and within a fortnight prices rose £9 a ton, purely in consequence of this operation, from which point they subsequently receded for a short time by 2 or 3 shillings, afterwards rising again until at present, prices are practically as high as in previous years.

The cheese during the year has been coming along in very good shape and, except for a few instances here and there, free from heat. With regard to the boxes, no improvement can be said to have taken place, but the suggestion of adopting a similar type of package to the New Zealand does not find favour with Bristol merchants. It may be all that could be wished for as a strong package and good for stowage on the voyage, but because of the time lost in opening in order to get the

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cheese out for weighing and because it is a lumbersome package to handle, it does not appeal to the merchant. The Canadian style of box cannot be improved on; what is wanted is something stronger and better able to stand the frequent handling from factory to final destination.

Butter.—A small consignment of 1,728 boxes in two shipments came to hand during the months of August and September, the same arriving in very good condition. Comparatively high prices have ruled throughout the year and at no time has any noticeable accumulation of stocks been observed. The chief sources of supply have been New Zealand and the Continent.

Meats.—Our imports of Canadian meats have shown a big reduction this past year, our totals amounting to only about 800 cases. The most noticeable feature of the bacon market has been the great shortage in supplies of English cured, American and Canadian produce, and the enormous increase in the supplies of Irish, Danish, Dutch and Russian. In England a large number of pigs have been slaughtered because of the swine fever scare. Recently a society has been formed to encourage the breeding of pigs, but it is doubtful if this industry will ever be in the flourishing condition it was prior to the increased importation of colonial butter and cheese, as the farmers in ever-increasing numbers are selling their milk, instead of making these products, consequently there is no skimmed milk for pig feeding. The condition of the Canadian meat on arrival was excellent, health and food inspectors speaking highly of it. The most of our shipments were sent forward to London, though a quantity was retained here for Bristol merchants.

Apples.—A shortage of supply has also occurred in this article, one reason being the same as has affected all ports, viz., the shortness of yield in Ontario and Nova Scotia, and also because of the Royal Line steamers having taken up St. John, N.B., as their winter port, instead of Halifax, N.S., from which port in other years we received a good supply. This year the Nova Scotian apples have gone to other ports for distribution to South Wales, and the Bristol merchants still seem to favour getting their own requirements through London. Our totals for the past year amounted to about 21,000 barrels, and taken all through they have arrived in very good condition and well packed. High prices have ruled, so that importers have had nothing to complain of in this respect, Baldwins fetching up to 28 shillings and 29 shillings, G. Russet 32s. to 33s. 6d., other varieties accordingly. In the apple trade Cardiff is now taking a good position as a distributing centre, as within a small radius of this port there are large mining districts with a big population, and the working class there are taking more and more fruit than they did only a few years back, consequently Cardiff which only about ten years ago took no supplies of apples, now bids to become a large distributing centre, increasing yearly. The miners favour well-coloured apples, but there is a demand for No. 2's and 3's.

We also received 1,250 boxes of apples which arrived in excellent condition, well and carefully packed. I am of opinion that with No. 1 grades this mode of packing should be more adopted; it is preferable to the barrels for it is very rare to come across any fruit bruised or injured through tight packing.

Pears.—A small quantity of pears also came to hand (400 barrels of Duchess and Keiffer) and were sent through to Cardiff in good condition, where they made favourable prices.

Peaches.—No direct shipments of peaches have come to Bristol this year, what have been on sale here having come through from London. The fruit was in excellent condition and fetched good prices, retailing at 6 pence each. The past two months South African fruit has been coming along in good quantities, grapes, pears, plums,

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peaches and nectarines, all arriving on this market in good shape. This trade is increasing.

Thermographs and Cold Storage.—Again this past year there has been no call for low temperatures in the steamers, their chambers being chiefly stowed with cheese, lard, and meats, and kept at cool air temperatures of from 40 to 50 degrees. The thermographs placed on board the different steamers have worked well and shown good results.

During the past year further extensions have been made to the cold storages at Avonmouth, chiefly because of the increasing large imports of frozen meats from Australia and New Zealand, and when completed the accommodation for meats, fruit and dairy produce will be up-to-date.

One of the chief features of the year has been the enormous quantity of grain that has come to hand from Canada which for a time taxed to the utmost the resources of the docks at Bristol, Avonmouth and at Portishead on the opposite side of the river. To meet the increasing trade, improvements and alterations are to be made in the old dock at Avonmouth, and two large grain storage warehouses are to be erected in the new dock all with up-to-date equipment for quick handling and delivery. The lack of accommodation for grain has been a complaint of long standing and the use of the transit sheds for grain storage has been a great detriment to general produce arriving from Canadian ports, which upon being landed had to be stacked in any possible space or corner that was available. The big rush of grain this past year did not improve matters, and serious representations were made to the head authorities. As a result, considerable improvement was brought about, and the sheds where the Canadian ships discharge are now kept free of grain to the betterment of the handling of general produce. In making representations regarding these matters from time to time I have always been met in the most courteous manner, with a willingness on the part of the officials to assist in any improvement for the benefit of the trade in general, and with expressions of appreciation of the work the department at Ottawa is carrying on in the interests of Canadian trade.

I again thank merchants and officials generally for courtesies at all times extended.

HORACE E. SHALLIS.

REPORT OF THE GLASGOW CARGO INSPECTOR.

GLASGOW, December 31, 1913.

I beg to submit a report of my work as cargo inspector for the nine* months ending December 31, 1913.

The work of inspection was carried out this season on the same lines as in former years, which, besides watching the discharge of cargoes, has involved the following up of goods—chiefly fruit—attending sales, and submitting with the regular shipping report, the price-marked catalogues of sales.

Apples.—The trade in Ontario apples this season holds a record for high prices, which have been upheld throughout. Kings, Wealthys, Greenings, Baldwins and Spys are varieties exceptionally well received here, and growers should make them a special line for this market. It is generally agreed that too many varieties have a tendency to keep the average market values down, especially in cases where lots are unknown locally. Buyers are not keen on unpopular sorts, and go to sales purposely to bid for stock familiar to their customers.

* At the end of the year Mr. Davis was transferred to Canada and Mr. John M. Manson was appointed to succeed him as cargo inspector at Glasgow, his appointment dating from January 1, 1914.

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It would be an advantage if Ontario packers would protect both ends of the barrel with pulp heads, as frequently in the endeavour to guard against slacks, packages are over pressed and the fruit is bruised, the original object being thus frustrated.

Boxed apples.—Considerable quantities of boxed apples were landed during the season, and there appears to be a steady growth in the demand for the boxed package, especially with merchants who sell by private treaty. Good reports are to hand on the subject of pack and condition of consignments, and I need not emphasize the fact that to maintain the good reputation held here for this class of trade, only selected and clean varieties should be put up in boxes.

Marking of boxes.—Want of thought appears to be responsible for the unsatisfactory method adopted by some senders in marking the varieties and grades on the lid or side of the box, instead of the end where the name and brand is shown. When marked as above, and piled in warehouses, unnecessary and extra handling is involved before the merchant can determine the contents of package. This irritating practice can easily be remedied by placing full particulars on the end of the package.

Pears.—There have been considerable shipments of Duchess, Anjou, Clairgeau and Keiffers. They were packed chiefly in half-boxes and for the most part quickly cleared. Keiffers towards the finish showed signs of over-ripeness, but the cold storage facilities on steamers ensured the selling condition, without which this variety would certainly have arrived at a disadvantage. As an illustration of the merits of cold storage transit, one consignment of 740 boxes Keiffer pears was sent in ordinary stowage on steamer, and although shipped late in November, were landed in such a wasty and worthless condition that the sanitary authorities intervened.

Peaches.—Two small consignments of Elbertas were placed with merchants in excellent condition, but presumably through lack of appreciation, or possibly a preference for pears, they met with but little attention.

Thermographs.—Thermographs were placed with all consignments on steamers the record of which showed satisfactory temperatures throughout the season.

THOMAS E. DAVIS.

SUPPLEMENTARY REPORT.

GLASGOW, March 31, 1914.

I beg to submit my report for the three months ending 31st March, 1914.

Since my appointment on January 1 last the work of cargo inspection has been carried on much the same as formerly, including the attending of the arrival of steamers, watching the discharging of cargoes, examining same on dock and at stores, attending sales and sending priced catalogues along with regular shipping report.

Cheese.—At the opening of the season stocks of Canadian cheese were entirely depleted, but a big carry-forward of New Zealand cheese, together with prolonged imports of the same right up to the end of July reduced the demand for Canadian cheese, New Zealand cheese together with the home production of Scotch cheese being ample for trade requirements. From July to December shipments were in more normal proportions, and but for high cost in Canada probably much heavier quantities would have been required here. Relative to home cheese and other competing imports, Canadian cheese held its place fairly well. Quality was if anything

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more satisfactory than the previous year, but importers continue to complain of losses from short weights. Undoubtedly the poor quality of timber now used in cheese boxes detracts from their appearance, and it would be well if factory-men would spend a little more to secure a more satisfactory box, and one that would not only be an improvement in appearance, but less liable to breakage. It has been remarked to me by one consignee that the boxes coming from the western districts of Ontario were usually in sounder condition than those shipped from Montreal. In some of the late-made shipments complaint was made of poor quality, due to want of curing. A number of shipments showed too much acidity and these cheese do a great deal of harm to the reputation and popularity of Canadian cheese as a whole.

Butter.—No shipments of Canadian butter were received during the season at this port.

Bacon.—Arrivals during the year show a considerable shrinkage in the total quantities, but the quality and condition have been uniformly good and no complaints have been made.

Apples.—Ontarian.—The season just finishing has been remarkable for high prices caused by shortage in arrivals. Towards the close of the season a large number of shipments were affected by frost, but even this did not prevent them from realising very high prices.

Boxed apples.—The prevailing opinion is that in the matter of packing the trend is towards improvement and, as boxes are in good demand for a high-class family trade, if still more care was exercised in the grading of apples in boxes for this market, better results would obtain.

Apples.—Nova Scotian.—Quality taken all through has been very good, but grading leaves something to be desired. A complaint here is the large percentage of No. 3 grade apples arriving from Nova Scotia but branded as No. 2. Another complaint is the want of steamer facilities from Halifax towards the end of the season, and one merchant here reports the loss of a large consignment owing to the steamer by which they were to leave being loaded in full at Boston and leaving out Halifax altogether, with the result that this consignment was distributed over other districts.

I would like to take this opportunity of expressing my indebtedness to the officials of the various lines of steamers, and also to the importers and merchants here for their courtesy on every occasion and their willingness to assist me in every way with my work.

JOHN M. MANSON.

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WHOLESALE QUOTATIONS FOR BUTTER each week from April 2, 1913, to March 25, 1914.

(From "Boston Chamber of Commerce", "Producers' Price Current", "Daily Trade Bulletin", "Maritime Merchant", "Journal of Commerce", "Farm and Dairy" and "Winnipeg Free Press".)

Week.		Boston.	New York	Chicago.	Halifax.	Montreal.	Toronto.	Winnipeg.
		"Extras."	"Extras."	"Extras."	"Creamery Solids."	"Creamery Solids."	"Creamery Solids."	"Creamery Solids."
1913.		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
April	2...	.. - 36	34 ³ / ₄ - 35	34 ¹ / ₂ - 35	...	29 ¹ / ₂ - 30	30 - 31	...
"	9....	.. - 36	35 ¹ / ₂ - ..	34 - ..	31 - 32	32 ¹ / ₂ - ..	30 - 31	31 ¹ / ₂ - ..
"	16....	.. - 36	35 ¹ / ₂ - ..	34 - ..	...	33 - ..	30 - 31	...
"	23....	.. - 33 ¹ / ₂	33 - 33 ¹ / ₂	33 - ..	27 - 28	32 - ..	30 - 31	31 ¹ / ₂ - ..
"	30....	.. - 29	30 ³ / ₄ - 31	29 ¹ / ₂ - 30	...	27 - ..	30 - 31	31 ¹ / ₂ - ..
May	7....	.. - 29	28 ⁵ / ₈ - 29	27 ⁵ / ₈ - ..	.. - 30	26 - 26 ¹ / ₂	27 - 28	31 ¹ / ₂ - ..
"	14....	.. - 29	28 ⁵ / ₈ - 29	27 ³ / ₄ - ..	...	26 - 26 ¹ / ₂	27 - 28	30 ¹ / ₂ - ..
"	21....	.. - 29	28 ³ / ₄ - 29	27 ¹ / ₂ - 28	27 - .	26 ¹ / ₄ - 26 ¹ / ₂	27 - 28	28 ¹ / ₂ - ..
"	28....	28 - ..	27 ¹ / ₂ - 27 ³ / ₄	27 - 27 ¹ / ₂	...	26 ¹ / ₄ - 26 ¹ / ₂	25 - 27	28 ¹ / ₂ - ..
June	4....	28 - ..	27 ³ / ₄ - 28	27 ¹ / ₂ - ..	28 - 29	26 - ..	25 - 27	27 ¹ / ₂ - ..
"	11....	28 ¹ / ₂ - ..	28 - 28 ¹ / ₄	27 ¹ / ₂ - ..	...	25 ¹ / ₂ - 25 ³ / ₄	25 - 27	26 ¹ / ₂ - ..
"	18....	28 ¹ / ₂ - ..	28 - 2 ¹ / ₄	27 ¹ / ₂ - 27 ³ / ₄	28 ..	25 ¹ / ₂ - 25 ³ / ₄	25 - 27	26 ¹ / ₂ - ..
"	25....	28 - ..	27 ¹ / ₄ - 27 ¹ / ₂	27 - ..	...	25 ¹ / ₂ - 25 ³ / ₄	25 - 27	26 ¹ / ₂ - ..
July	2....	27 ¹ / ₂ - ..	27 ¹ / ₂ - 27 ³ / ₄	26 - 26 ¹ / ₂	28 - ..	26 - 26 ¹ / ₄	25 - 27	27 - ..
"	9....	28 - ..	28 ¹ / ₄ - 28 ¹ / ₂	26 ¹ / ₂ - 26 ³ / ₄	...	25 ¹ / ₂ - 25 ³ / ₄	25 - 27	27 - ..
"	16....	27 ¹ / ₂ - ..	26 ³ / ₄ - 27	26 - ..	28 - ..	25 - 25 ¹ / ₄	24 - 25 ¹ / ₂	26 ¹ / ₂ - 27
"	23....	27 ¹ / ₂ - ..	26 ³ / ₄ - 27 ¹ / ₄	26 ¹ / ₄ - ..	...	24 ¹ / ₄ - 24 ¹ / ₂	24 - 25 ¹ / ₂	25 - 26
"	30....	27 - ..	26 ¹ / ₄ - 26 ³ / ₄	26 - ..	27 - ..	23 ³ / ₄ - 24	24 - 25 ¹ / ₂	24 - ..
Aug.	6....	27 ¹ / ₂ - ..	26 ³ / ₄ - 27 ¹ / ₄	26 ¹ / ₂ - ..	...	24 - 24 ¹ / ₄	24 - 25 ¹ / ₂	...
"	13....	27 ¹ / ₂ - ..	27 ¹ / ₄ - 27 ³ / ₄	26 ³ / ₄ - 27	27 - ..	24 ¹ / ₄ - 24 ¹ / ₂	24 - 25 ¹ / ₂	24 - ..
"	20...	28 ¹ / ₂ - ..	28 - 28 ¹ / ₄	27 - 27 ¹ / ₄	...	23 ³ / ₄ - 24	24 - 25 ¹ / ₂	24 - ..
"	27...	29 ¹ / ₂ - ..	29 ¹ / ₄ - 29 ¹ / ₂	28 - ..	28 - ..	24 - 24 ¹ / ₂	24 - 25 ¹ / ₂	...
Sept.	3....	30 ¹ / ₂ - ..	30 ¹ / ₂ - 31	30 - 30 ¹ / ₂	...	24 ³ / ₄ - 25	24 - 25 ¹ / ₂	25 - ..
"	10....	.. - 31	31 ¹ / ₂ - 32	30 - 30 ¹ / ₂	28 - ..	25 ¹ / ₄ - 25 ¹ / ₂	24 - 25 ¹ / ₂	26 - ..
"	17...	.. - 32	32 - 32 ¹ / ₂	31 - ..	...	26 - 26 ¹ / ₄	24 - 25 ¹ / ₂	27 - ..
"	24....	32 - ..	32 - 32 ¹ / ₂	31 - ..	28 - ..	27 ¹ / ₂ - 28	24 - 25 ¹ / ₂	27 - ..
Oct.	1....	31 - ..	30 ¹ / ₂ - 31	30 ¹ / ₂ - ..	...	28 - 28 ¹ / ₂	26 - 26 ¹ / ₂	28 ¹ / ₂ - ..
"	8....	.. - 31 ¹ / ₂	31 - 31 ¹ / ₂	30 ¹ / ₂ - ..	29 - 30	27 ¹ / ₄ - 27 ³ / ₄	26 - 26 ¹ / ₂	28 ¹ / ₂ - ..
"	15....	.. - 31	30 ¹ / ₂ - 31	29 - ..	...	27 ¹ / ₄ - 27 ³ / ₄	26 - 26 ¹ / ₂	28 - 28 ¹ / ₂
"	22....	31 - ..	31 ¹ / ₂ - 32	30 - ..	29 - 30	27 - 27 ¹ / ₄	26 - 26 ¹ / ₂	28 - 28 ¹ / ₂
"	29....	31 ¹ / ₂ - ..	32 - 33	31 - ..	27 ¹ / ₂ - 27 ¹ / ₄	27 ¹ / ₂ - 27 ³ / ₄	26 - 26 ¹ / ₂	28 - 28 ¹ / ₂
Nov.	5....	31 ¹ / ₂ - ..	32 - 33	31 ¹ / ₂ - ..	29 - 30	27 ¹ / ₄ - 28 ¹ / ₄	26 - 26 ¹ / ₂	29 ¹ / ₂ - 30
"	12....	32 - ..	34 - 35	31 - ..	...	28 - 28 ¹ / ₂	26 ¹ / ₂ - 27	29 ¹ / ₂ - 30
"	19...	32 - ..	34 - 35	32 - ..	30 - 31	28 - 28 ¹ / ₂	27 - 28	30 - 30 ¹ / ₂
"	26....	32 - ..	33 - 35	32 - ..	...	28 - 28 ¹ / ₂	28 - 29	30 - 30 ¹ / ₂
Dec.	3....	32 ¹ / ₂ - ..	34 - 35	33 - ..	30 - 31	28 - 28 ¹ / ₂	28 - 29	...
"	10....	33 ¹ / ₂ - ..	35 ¹ / ₂ - 37	34 - ..	...	28 ¹ / ₂ - 29	28 - 29	30 - 30 ¹ / ₂
"	17....	34 - ..	36 - 37	35 ¹ / ₂ - ..	30 - 31	28 ¹ / ₂ - 29	28 - 29	30 - 30 ¹ / ₂
"	24....	34 - ..	36 ¹ / ₂ - 37 ¹ / ₂	36 - ..	...	28 ¹ / ₂ - 29	28 - 29	30 - ..
"	31....	.. - 35	36 ¹ / ₂ - 37 ¹ / ₂	35 ¹ / ₂ - 36	30 - 31	28 - 28 ³ / ₄	28 - 30	30 - ..
1914.								
Jan.	7....	34 ¹ / ₂ - ..	36 ¹ / ₂ - 37	34 ¹ / ₂ - 35	...	28 - 28 ³ / ₄	28 - 29	...
"	14....	33 ¹ / ₂ - ..	33 - 33 ¹ / ₂	32 ¹ / ₂ - ..	30 - 31	28 - 28 ³ / ₄	28 - 29	29 ¹ / ₂ - ..
"	21....	32 - ..	30 ¹ / ₂ - 31	30 - ..	...	28 - 28 ³ / ₄	28 - 29	29 ¹ / ₂ - ..
"	28....	.. - 30	28 - 28 ¹ / ₂	27 ¹ / ₂ - ..	30 - 31	28 ¹ / ₂ - 29	28 - 29	28 ¹ / ₂ - ..
Feb.	4....	28 - ..	27 - 27 ¹ / ₂	26 ¹ / ₂ - ..	...	28 ¹ / ₂ - 29	28 - 29	28 - ..
"	11..	28 - ..	28 - 28 ¹ / ₂	27 ¹ / ₂ - ..	31 - 32	28 ¹ / ₂ - 29	28 - 29	27 ¹ / ₂ - 28
"	18....	29 ¹ / ₂ - ..	30 ¹ / ₂ - ..	29 ¹ / ₂ - ..	...	28 ¹ / ₂ - 29	28 - 29	...
"	25...	30 - ..	31 - 31 ¹ / ₂	29 ¹ / ₂ - 30	30 - 31	28 ¹ / ₂ - 29	28 - 29	27 ¹ / ₂ - 28
March	4....	30 - ..	31 ¹ / ₂ - 32	30 - ..	...	27 ¹ / ₂ - 28	28 - 29	28 - ..
"	11....	.. - 29	28 - 29	27 - ..	29 - 30	27 ¹ / ₂ - 28	28 - 29	28 ¹ / ₂ - ..
"	18....	.. - 26	24 ¹ / ₂ - 25	24 ¹ / ₂ - ..	...	27 ¹ / ₂ - 28	26 - 27	28 ¹ / ₂ - ..
"	25....	26 - ..	26 - 26 ¹ / ₂	.. - 25	29 - 30	27 ¹ / ₂ - 28	26 - 27	30 ¹ / ₂ - ..

5 GEORGE V., A. 1915

WHOLESALE QUOTATIONS FOR CHEESE each week from April 2, 1913, to March 25, 1914.

(From "Boston Chamber of Commerce," "Producers' Price Current," "Daily Trade Bulletin,"
"Maritime Merchant," "Journal of Commerce," "Farm and Dairy,"
and Winnipeg 'Free Press'.')

Week.		Boston.	New York.	Chicago.	Halifax.	Montreal.	Toronto.	Winnipeg.
		"N. Y. Twins."	Whole Milk "Fancy coloured."	"Twins."	"Westerns."	"Westerns."	"Westerns."	"Westerns."
1913.		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
April	2....	17 - 17½	16 - 16½	13 - ..	.....	12½ - 13	15 - ..	.....
"	9....	16½ - ..	16 - 16½	13 - ..	14½ - 15	12 - 13	15 - ..	14½ - 15
"	16....	16½ - ..	16 - 16½	13 - ..	.....	12 - 13	15 - ..	.....
"	23....	.. - 16½	16 - 16½	13 - ..	13 - ..	12 - 13	15 - ..	14½ - 15
"	30....	16 - 16½	13 - ..	13 - 13½	.....	12 - 13	15 - ..	14½ - 15
May	7....	16 - 16½	12½ - 13½	13 - ..	13 - ..	11 - 11½	13 - 13½	13 - 14
"	14....	.. - 17	12½ - 12½	13 - ..	.....	11 11½	13 - 13½	13 - 14
"	21....	14 - ..	13 - ..	12 - 12½	13 - ..	11 11½	13 - 13½	13 - 14
"	28....	14½ - ..	13½ - ..	13 - ..	.....	12 - 12½	13 - 13½	13 - 14
June	4....	14½ - 14½	14 - ..	13½ - 14	13 - ..	12 - ..	13 - 13½	13½ - 14½
"	11....	14½ - 15	14½ - ..	13½ - 14	.....	12 - 12½	13½ - 14	13 - 13½
"	18....	14½ - 15	14½ - ..	14 - 14½	13 - ..	12 - 12½	13½ - 14	13 - 13½
"	25....	14½ - 15	14½ - 14½	14 - ..	.....	12 - 12½	13½ - 14	13½ - 14
July	2....	14½ - 15	.. - 14	13½ - 14	14 - ..	13 - 13½	13½ - 14	14 - 14½
"	9....	14½ - ..	13½ - 14	13 - 13½	.....	13½ - 13½	13½ - 14	14 - 14½
"	16....	14½ - ..	13½ - 14	13 - ..	14 - ..	13½ - 13½	14½ - 14½	14 - 14½
"	23....	14½ - 14½	.. - 14	13 - ..	.....	13½ - 13½	14½ - 14½	14 - 14½
"	30....	14½ - 14½	13½ - 14	13 - ..	14 - ..	13½ - 13½	14½ - 14½	13½ - 14
Aug.	6....	14½ - 14½	13½ - 14	13 - ..	.....	13½ - 14½	14½ - 14½	.....
"	13....	14½ - 15	14 - 14½	13 - ..	14 - ..	13½ - 13½	14½ - 14½	13½ - 14
"	20....	15 - 15½	14½ - ..	13 - 13½	.....	13½ - 13½	14½ - 14½	13½ - 14
"	27....	15½ - 15½	15 - ..	13½ - 14	14 - ..	13 - 13½	14½ - 14½	.....
Sept.	3....	16 - 16½	15½ - 15½	13½ - 14	.....	13½ - 13½	14½ - 14½	14 - 14½
"	10....	16 - 16½	15½ - 15½	13½ - 14	14½ - ..	13½ - 13½	14½ - 14½	14½ - 14½
"	17....	16½ - 16½	15½ - ..	13½ - 14	.....	13½ - 13½	14½ - 15½	14½ - 14½
"	24....	17 - ..	15½ - 16	14 - 14½	14½ - ..	13½ - 13½	14½ - 15½	15 - 15½
Oct.	1....	.. - 17	16 - 16½	15 - 15½	.....	13½ - 13½	14½ - 15½	15 - 15½
"	8....	16½ - 17	16½ - ..	15 - 15½	15 - 15½	13 - 13½	14½ - 14½	14 - 14½
"	15....	16½ - 17	16 - ..	14 - 14½	.....	13 - 13½	14½ - 14½	14 - 14½
"	22....	16 - 16½	15½ - ..	14 - ..	15 - 15½	13 - 13½	14½ - 14½	14½ - 15
"	29....	16½ - 16½	15½ - ..	14 - ..	.....	13½ - 13½	14½ - 14½	14½ - 15
Nov.	5....	16½ - 16½	15½ - ..	14 - ..	15 - ..	1 - 13½	14½ - 14½	14½ - 15
"	12....	16½ - 16½	15½ - 16	14 - ..	.....	13½ - 13½	14½ - 14½	14½ - 15
"	19....	16½ - 17	16½ - ..	14 - ..	15 - ..	13½ - 13½	14½ - 14½	14½ - 15½
"	26....	16½ - 17	16½ - ..	14 - 14½	.....	13½ - 13½	14½ - 15	14½ - 15½
Dec.	3....	16½ - 17	16 - 16½	14 - 14½	15 - 15½	13½ - 13½	14½ - 15	14½ - 15½
"	10....	16½ - 17	16 - 16½	14 - 14½	.....	13½ - 13½	13½ - 15	14½ - 15½
"	17....	16½ - 17	16½ - 16½	14 - 14½	15 - 15½	13½ - 13½	14½ - 15	14½ - 15½
"	24....	17 - 17½	16½ - 16½	14½ - 15½	.....	13½ - 13½	14½ - 15	14½ - 15½
"	31....	17 - 17½	16½ - ..	15½ - 16½	15 - 15½	13½ - 13½	.. - 15	15 - 15½
1914.								
Jan.	7....	.. - 17½	16½ - 17	16½ - ..	.....	13½ - 13½	15 - 15½	.....
"	14....	17½ - 17½	17 - 17½	16 - 17	15 - 15½	13½ - 13½	15 - 15½	15½ - 15½
"	21....	17½ - 18	17½ - 17½	16 - 17	.....	13½ - 13½	15 - 15½	15½ - 15½
"	28....	18 - ..	17½ - 17½	16 - 17	15 - 15½	13½ - 13½	15 - 15½	15½ - 15½
Feb.	4....	18 - 18½	17½ - 17½	16 - 17	.....	13½ - 13½	15 - 15½	15½ - 15½
"	11....	18½ - 18½	17½ - 17½	16 - 17	15 - 15½	13½ - 13½	15 - 15½	15½ - 16
"	18....	18½ - 18½	17½ - 17½	16 - 17	.....	13½ - 13½	15 - 15½	15½ - 16
"	25....	18½ - 18½	17½ - 17½	16 - 16½	15½ - 16	13½ - 13½	15½ - ..	15½ - 16
Mar.	4....	18½ - 18½	17½ - 18	16 - 16½	.....	13½ - 13½	15½ - ..	15½ - 16
"	11....	.. - 18½	17½ - 18½	16 - 16½	16½ - 17	13½ - 13½	15½ - ..	15½ - 16½
"	18....	18½ - 19	18½ - 18½	16 - 16½	.....	13½ - 13½	16 - 16½	15½ - 16½
"	25....	18½ - 19	18½ - 18½	16½ - 16½	16½ - 17	13½ - 13½	16 - 16½	15½ - 16½

SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR EGGS each week from April 2, 1913, to March 25, 1914.

(From "Boston Chamber of Commerce," "Producers Price Current," "Daily Trade Bulletin," "Maritime Merchant," "Journal of Commerce," "Farm and Dairy," and "Winnipeg Free Press.")

		Boston.	New York.	Chicago.	Halifax.	Montreal.	Toronto.	Winnipeg.
Week.		"Western Firsts."	"Firsts."	"Firsts."	"Fresh."	"Fresh."	"Fresh."	"Fresh."
1913.		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
April	2....	18½- 19	18¼- 18½	16¾- 17	.. - 22	18 - 20	22 - 23	.. - 23
"	9....	.. - 19½	.. - 20	17¾- 18¼	.. - 22	.. - 21	21 - 22	.. - 23
"	16....	.. - 19	19½- 20½	17¼- 17½	.. - 22	.. - 21	21 - 22	.. - 20
"	23....	.. - 19½	19½- 20½	17¼- 17½	20 - 22	.. - 20	20 - 21	.. - 20½
"	30....	19½- 20	20 - 21	17½- 18	.. - 18	.. - 19	20 - 21	.. - 20½
May	7....	20 - 20½	19 - 19½	17½- 17¾	.. - 19	.. - 20	20 - 21	.. - 21
"	14....	.. - 21	20 - 20½	18¼- 18½	.. - 20	.. - 21	20 - 21	.. - 21
"	21...	21 - 21½	20 - 20½	18¼- 18½	.. - 20	.. - 21	20 - 21	.. - 21
"	28...	21 - 21½	20 - 20½	18¼- 18½	.. - 20	.. - 21	20 - 21	.. - 21
June	4....	.. - 20½	19 - 19½	17½- 18	.. - 20	23 - 25	20 - 21	.. - 20½
"	11....	20 - 20½	19 - 19½	17½- 18	.. - 20	22 - 23	21 - 22	.. - 20½
"	18....	20 - 20½	19 - 20	16 - 16¼	.. - 20	.. - 22	21 - 22	.. - 20½
"	25....	.. - 19	18½- 19½	17¼- 17¾	.. - 22	.. - 22	21 - 22	.. - 20½
July	2....	.. - 18	18 - 19	17¼- 17¾	.. - 22	.. - 22	21 - 22	.. - 20½
"	9....	.. - 18	18 - 20	16½- 16¾	.. - 22	23 - 24	21 - 22	.. - 20½
"	16....	.. - 18	18½- 20	16 - 16½	.. - 22	23 - 24	20 - 21	.. - 20½
"	23....	.. - 18	19 - 20	17¼- 17½	.. - 27	.. - 27	20 - 21	.. - 20½
"	30....	19 - 20	20 - 21	.. - 19	.. - 22	.. - 27	20 - 21	.. - 23
Aug.	6....	.. - 21	21 - 22	19 - 19½	.. - 24	.. - 27	20 - 21	.. - 23
"	13....	22 - 23	23 - 24	20 - 21	.. - 24	.. - 27	20 - 21	.. - 23
"	20....	23 - 24	24 - 25	21½- 22	.. - 25	.. - 27	20 - 21	.. - 22
"	27....	24 - 25	24 - 25	22½- 23	.. - 29	.. - 29	22 - 24	.. - 25
Sept.	3....	26 - 27	24 - 25	22½- 23	.. - 25	.. - 29	23 - 25	.. - 26
"	10....	27 - 28	25 - 27	23 - 23½	.. - 25	.. - 29	23 - 25	.. - 26
"	17....	26 - 28	27 - 29	23½- 24	.. - 27	.. - 30	23 - 25	.. - 26
"	24....	27 - 28	28 - 30	25 - 25½	.. - 27	.. - 32	23 - 25	.. - 26
Oct.	1....	28 - 30	27 - 29	25 - 26	.. - 29	.. - 32	27 - 28	.. - 27
"	8....	28 - 30	28 - 30	25 - 26	.. - 29	29 - 31	28 - 30	.. - 27
"	15....	28 - 30	28 - 30	25 - 26	.. - 31	30 - 32	28 - 30	.. - 27
"	22....	28 - 30	29 - 30	29½- 30½	.. - 31	.. - 32	30 - 32	.. - 27
"	29....	28 - 31	30 - 32	29½- 30½	.. - 31	.. - 32	30 - 32	.. - 27
Nov.	5....	32 - 33	33 - 34	30 - 31	.. - 31	33 - 34	30 - 32	.. - 27
"	12....	35 - 40	40 - 42	30 - 32	.. - 32	34 - 35	30 - 32	.. - 27
"	19....	38 - 42	39 - 41	34 - 34½	.. - 32	35 - 36	30 - 32	.. - 27
"	26....	40 - 43	42 - 43	34 - 35	.. - 32	37 - 38	34 - 35	.. - 28
Dec.	3....	40 - 43	42 - 43	36 - 37	38 - 40	37 - 38	34 - 35	.. - 32
"	10....	38 - 40	35 - 36	31 - 31½	.. - 38	37 - 38	36 - 37	.. - 32
"	17....	34 - 35	33 - 34	30½- ..	38 - 40	37 - 38	36 - 37	.. - 32
"	24....	34 - ..	33½- 34	31½- ..	.. - 38	37 - 38	35 - 36	.. - 32
"	31....	.. - 35	35½- 36	32¼- 33	38 - 40	37 - 38	.. - 37	.. - 34
1914.								
Jan.	7....	34 - ..	33½- 34	32 - ..	.. - 35	37 - 38	35 - 36	.. - 37
"	14....	34 - ..	34 - 35	32 - ..	34 - 35	37 - 38	.. - 37	.. - 37
"	21....	.. - 32	31 - 32	31 - ..	.. - 35	37 - 38	36 - 38	.. - 37
"	28....	32 - 33	31½- 32	29 - ..	34 - 35	35 - 36	36 - 38	.. - 37
Feb.	4....	31 - ..	29½- 30	26¼- 26½	.. - 35	35 - 36	36 - 38	.. - 35
"	11...	29 - ..	27 - 27½	26½- ..	35 - 36	35 - 36	36 - 38	.. - 34
"	18....	30 - ..	29½- 30	26 - ..	.. - 35	35 - 36	34 - 35	.. - 32
"	25....	28 - 29	29½- 30	26 - ..	35 - 36	35 - 36	33 - 34	.. - 32
March	4....	.. - 31	32 - 33	29 - 29¼	.. - 30	30 - 31	33 - 34	.. - 30
"	11....	.. - 30	.. - 30	26½- 26¾	30 - 33	30 - 31	33 - 34	.. - 30
"	18....	.. - 21	20½- 21	18¼- ..	.. - 30	30 - 31	34 - 35	.. - 20
"	25....	19 - ..	20 - 20½	17½- 17¾	24 - 25	30 - 31	26 - ..	.. - 18

NOTE.—In the Canadian markets "Selected Cold Storage" is the grade quoted after the close of the producing season.

5 GEORGE V., A. 1915

WHOLESALE QUOTATIONS FOR BREAKFAST BACON each week from April 2, 1913, to March 25, 1914.

(From "Canadian Farm," "National Provisioner," and "The Grocer," London.)

Week.	New York.	Chicago.	Montreal.	Toronto.	Winnipeg.	London, Eng.
	Breakfast Bacon.	Breakfast Bacon.	Breakfast Bacon.	Breakfast Bacon.	Breakfast Bacon.	Canadian Bacon Leanest (Landed).
1913	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
April 2.....	18½- 19	17½- 20½	21 - 22	19 - 19½	19 - 20	15.8 - 16.0
" 9.....	18½- 19	18 - 21	21 - 22	19½- 20	19 - 20	15.8 - 16.0
" 16.....	.. - 19	18 - 21	21 - 22	19½- 20	19 - 20	15.8 - 16.0
" 23.....	.. - 19	18 - 21½	21 - 22	19½- 20	19 - 20	15.8 - 16.0
" 30.....	.. - 19	18 - 21½	21 - 22	19½- 20	19 - 20	16.0 - 16.5
May 7.....	.. - 19	18 - 21½	21 - 22	19½- 20	19 - 20	16.9 - 17.1
" 14.....	19 - 20	18 - 21½	22 - 23	19½- 20	19 - 20	16.9 - 17.1
" 21.....	19 - 20	18½- 21½	22 - 23	19½- 20	19 - 20	16.5 - 17.1
" 23.....	19 - 20	18½- 21½	22 - 23	19½- 20	20 - 21	16.2 - 16.9
June 4.....	20 - 21	18½- 22½	22 - 23	19½- 20	20 - 21	16.0 - 16.7
" 11.....	20 - 21	18½- 22½	20 - 22	19½- 20	20 - 21	16.0 - 16.7
" 18.....	20 - 21	18½- 22½	20 - 22	20 - 21	20 - 21	16.0 - 16.7
" 25.....	20 - 21	18½- 22½	20 - 22	20 - 21	20 - 21	16.2 - 16.7
July 2.....	20 - 21	18½- 22½	20 - 22	20 - 21	20 - 21	16.5 - 17.1
" 9.....	20 - 21	18½- 22½	20 - 22	20 - 21	20 - 21	16.5 - 16.1
" 16.....	20 - 21	18½- 22½	20 - 22	20 - 21	20 - 21	16.7 - 16.9
" 23.....	20 - 21	18½- 22½	20 - 22	20 - 21	20 - 21	16.9 - 17.5
" 30.....	20 - 21	18½- 22½	20 - 22	20 - 21	20 - 21	18.2 - 18.4
Aug. 6.....	19 - 20	18½- 22	20 - 22	21 - 22	20 - 21	18.2 - 18.4
" 13.....	18½- 19½	18½- 22	20 - 22	21 - 22	20 - 21	16.9 - 17.8
" 20.....	18½- 19½	18½- 22	20 - 20½	21 - 22	19 - 21	16.5 - 16.9
" 27.....	18½- 19½	18½- 21½	22 - 25	21 - 22	19 - 21	16.2 - 16.9
Sept. 3.....	18½- 19½	18½- 21½	22 - 25	19 - 20	19 - 21	16.2 - 16.9
" 10.....	18½- 19½	18½- 20½	22 - 25	19 - 20	19 - 21	16.5 - 16.9
" 17.....	.. - 18	17½- 19½	20 - 23	19 - 20	19 - 21	16.5 - 16.9
" 24.....	.. - 18	17½- 19½	20 - 23	19 - 20	19 - 20	17.3 - 17.8
Oct. 1.....	.. - 18	17½- 19½	20 - 23	19 - 20	19 - 21	17.3 - 17.8
" 8.....	.. - 18	17½- 19½	20 - 23	19 - 20	19 - 21	16.0 - 16.7
" 15.....	.. - 18	17½- 19½	20 - 23	19 - 20	19 - 21	16.0 - 16.7
" 22.....	.. - 18	17½- 19½	19 - 22	19 - 20	19 - 21	15.2 - 15.6
" 23.....	.. - 18	17½- 19½	17 - 19	19 - 20	19 - 21	14.5 - 14.9
Nov. 5.....	.. - 18	17½- 19½	17 - 19½	19 - 20	19 - 21	14.5 - 14.9
" 12.....	.. - 18	17½- 19½	17 - 19	19 - 20	19 - 21	14.5 - 14.9
" 19.....	.. - 18	17½- 19½	17 - 19	19 - 20	19 - 21	14.7 - 15.3
" 26.....	.. - 18	17½- 18½	18 - 19	19 - 20	19 - 21	14.7 - 15.3
Dec. 3.....	.. - 18	17½- 18½	18 - 19	19 - 20	19 - 21	14.7 - 15.3
" 10.....	.. - 18	17 - 18	17 - 19	19 - 21	19 - 21	14.5 - 15.2
" 17.....	.. - 17½	17 - 18	17 - 19	19 - 20	19 - 20	14.5 - 15.2
" 24.....	.. - 17½	17 - 18	18½- 19	19 - 20	19 - 20	14.5 - 15.2
" 31.....	.. - 17½	16½- 17½	18½- 19	18 - 19	20 - 21½	14.5 - 15.2
1914						
Jan. 7.....	.. - 17½	16½- 17½	18½- 19	18 - 19	19 - 20	14.5 - 15.2
" 14.....	.. - 18	16½- 17½	18½- 19	18 - 19	19 - 19½	14.7 - 15.3
" 21.....	.. - 18	16½- 17½	18½- 19	18 - 19	19 - 19½	14.7 - 15.3
" 28.....	.. - 18	16½- 17½	18½- 19	18 - 19	19 - 19½	14.7 - 15.3
Feb. 4.....	.. - 18	16½- 17½	18½- 19	18 - 19	19 - 19½	15.2 - 15.6
" 11.....	.. - 18	16½- 17½	18½- 19	18 - 19	19 - 19½	14.7 - 15.6
" 13.....	.. - 18	17 - 18½	18½- 19	18 - 19	19 - 19½	14.1 - 14.9
" 25.....	.. - 18	17½- 18½	18½- 19	18 - 19	19 - 19½	13.9 - 14.3
Mar. 4.....	.. - 18	17½- 18½	18½- 19	18 - 19	19 - 19½	14.1 - 14.3
" 11.....	.. - 18	17½- 18½	18½- 18	18 - 19	19 - 19½	14.5 - 14.9
" 18.....	.. - 18	17½- 18½	18½- 19	18½- 19	19 - 20	16.3 - 16.7
" 25.....	.. - 18	17½- 19½	18½- 19	18½- 19	19 - 20	16.3 - 16.7

NOTE.—London quotations represent green bacon; for smoked bacon add one cent a pound.

SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR DRESSED BEEF (No. 1 Carcass) each week from April 2, 1913, to March 25, 1914.

(From "Canadian Farm," and "National Provisioner.")

Week.	New York.	Chicago.	Montreal.	Toronto.	Winnipeg.	Calgary.
1913.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
April 2.....	13 - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 11 $\frac{1}{2}$	11 - 11 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$
" 9.....	13 - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 11 $\frac{1}{2}$	11 - 11 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$
" 16.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 11 $\frac{1}{2}$	11 - 11 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$
" 23.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 11 $\frac{1}{2}$	11 - 11 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$
" 30.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	10 $\frac{1}{2}$ - 11 $\frac{1}{2}$	11 - 11 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$
May 7.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	10 $\frac{1}{2}$ - 11 $\frac{1}{2}$	11 $\frac{1}{2}$ - 12	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 14.....	.. - 12 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	10 $\frac{1}{2}$ - 11 $\frac{1}{2}$	11 $\frac{1}{2}$ - 12	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 21.....	.. - 12 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	10 $\frac{1}{2}$ - 11 $\frac{1}{2}$	11 $\frac{1}{2}$ - 12	13 - 13 $\frac{1}{2}$
" 28.....	12 $\frac{1}{2}$ - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	10 $\frac{3}{4}$ - 11 $\frac{1}{2}$	11 $\frac{1}{2}$ - 12	13 - 13 $\frac{1}{2}$
June 4.....	12 $\frac{1}{2}$ - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 12	11 $\frac{1}{2}$ - 12	13 - 13 $\frac{1}{2}$
" 11.....	13 - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 12	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
" 18.....	13 - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 12	13 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
" 25.....	13 - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 12	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
July 2.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	11 - 12	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
" 9.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	10 $\frac{1}{2}$ - 11 $\frac{1}{2}$	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
" 16.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 12	10 $\frac{1}{2}$ - 11 $\frac{1}{2}$	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
" 23.....	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11 $\frac{1}{4}$	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
" 30.....	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11 $\frac{1}{4}$	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
Aug. 6.....	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11 $\frac{1}{4}$	12 $\frac{1}{2}$ - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 13.....	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11 $\frac{1}{4}$	12 $\frac{1}{2}$ - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 20.....	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11 $\frac{1}{4}$	12 $\frac{1}{2}$ - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 27.....	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{4}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11	11 $\frac{1}{2}$ - 12	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
Sept. 3.....	13 - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{4}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11	11 $\frac{1}{2}$ - 12	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 10.....	13 - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{4}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11	9 $\frac{3}{4}$ - 10	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 17.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11	9 $\frac{3}{4}$ - 10	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 24.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11	9 $\frac{3}{4}$ - 10	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
Oct. 1.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	10 $\frac{1}{2}$ - 11	9 $\frac{3}{4}$ - 10	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 8.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 11 $\frac{1}{2}$	9 $\frac{3}{4}$ - 10	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 15.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 11 $\frac{1}{2}$	10 $\frac{1}{2}$ - 11	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 22.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 11 $\frac{1}{2}$	10 $\frac{1}{2}$ - 11	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 29.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 12	10 $\frac{1}{2}$ - 11	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
Nov. 5.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 12	10 $\frac{1}{2}$ - 11	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 12.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 12	10 $\frac{1}{2}$ - 11	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 19.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 12	10 $\frac{1}{2}$ - 11	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 26.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 12	11 - 12	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
Dec. 3.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	11 - 12	11 - 11 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 10.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	12 $\frac{1}{2}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 17.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	12 $\frac{1}{2}$ - 13 $\frac{1}{2}$	11 - 11 $\frac{3}{4}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$
" 24.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	12 - 13	13 - 14	11 - 11 $\frac{3}{4}$	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 31.....	.. - 13	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	13 - 14	9 $\frac{3}{4}$ - 10	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
1914.						
Jan. 7.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	13 - 14	11 $\frac{3}{4}$ - 13	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 14.....	13 $\frac{1}{2}$ - 14	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	13 - 14	11 $\frac{1}{4}$ - 11 $\frac{1}{2}$	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 21.....	14 - 14 $\frac{1}{2}$	13 - 13 $\frac{1}{4}$	13 - 13 $\frac{1}{2}$	13 $\frac{1}{2}$ - 14 $\frac{1}{2}$	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 28.....	13 - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{4}$	13 - 13 $\frac{1}{2}$	14 - 15	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
Feb. 4.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	14 - 15	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 11.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	13 - 15	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 18.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	13 $\frac{1}{2}$ - 14 $\frac{1}{2}$	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	13 $\frac{1}{2}$ - 13 $\frac{1}{2}$
" 25.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	13 $\frac{1}{2}$ - 14	12 $\frac{1}{2}$ - 13	13 - 13 $\frac{1}{2}$
Mar. 4.....	.. - 13 $\frac{1}{2}$	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	13 $\frac{1}{2}$ - 14	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$
" 11.....	.. - 13	13 $\frac{1}{4}$ - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	13 $\frac{1}{2}$ - 14	12 $\frac{1}{4}$ - 12 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$
" 18.....	.. - 13	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	11 $\frac{3}{4}$ - 12	13 - 13 $\frac{1}{2}$
" 25.....	.. - 13	13 $\frac{1}{2}$ - 14	13 - 13 $\frac{1}{2}$	13 - 13 $\frac{1}{2}$	11 $\frac{3}{4}$ - 12	13 - 13 $\frac{1}{2}$

5 GEORGE V., A. 1915

WHOLESALE QUOTATIONS FOR LIVE HOGS each week from April 2, 1913 to March 25, 1914.

Week.		New York.	Buffalo.	Chicago.	Montreal.
		"Medium weight."	"Yorkers."	"Choice" 160-190 lbs.	"Choice."
1913.		\$	\$ F. and W.	\$ F. and W.	\$ W. O. C.
April	2.....	..... - 10.55	10.90 - 11.00	9.40 - 9.50	..... - 10.75
"	9.....	9.90 - 10.00	9.50 - 9.60	9.25 - 9.40	..... - 10.50
"	16.....	9.65 - 9.75	9.60 - 9.70	9.25 - 9.40	10.25 - 10.50
"	23.....	9.65 - 9.75	9.50 - 9.65	9.15 - 9.25	..... - 10.35
"	30.....	9.25 - 9.35	9.55 - 9.60	8.70 - 8.85	..... - 10.50
May	7.....	..... - 9.00	8.80 - 9.05	8.55 - 8.60	..... - 10.50
"	14.....	..... - 9.00	8.85 - 8.90	8.40 - 8.50	..... - 10.50
"	21.....	..... - 9.20	8.85 - 8.90	8.50 - 8.65	..... - 10.75
"	28.....	..... - 9.20	8.80 - 9.00	8.65 - 8.70	..... - 10.75
June	4.....	..... - 9.20	..... - 9.00	8.75 - 8.80	..... - 10.75
"	11.....	..... - 9.20	9.05 - 9.10	8.55 - 8.65	..... - 10.75
"	18.....	..... - 9.20	9.20 - 9.25	8.85 - 8.95	..... - 10.75
"	25.....	..... - 9.20	9.05 - 9.10	8.75 - 8.80	..... - 10.00
July	2.....	..... - 9.30	9.05 - 9.10	8.75 - 8.85	10.40 - 10.50
"	9.....	..... - 9.70	9.35 - 9.40	9.05 - 9.20	10.40 - 10.50
"	16.....	..... - 9.90	9.65 - 9.70	9.15 - 9.25	10.40 - 10.50
"	23.....	..... - 10.10	9.85 - 9.90	9.40 - 9.60	..... - 10.75
"	30.....	..... - 10.10	9.90 - 9.95	9.35 - 9.50	..... - 11.00
Aug.	6.....	..... - 9.85	8.90 - 8.95	9.20 - 9.32½	..... - 11.00
"	13.....	..... - 9.70	9.65 - 9.75	9.10 - 9.35	..... - 10.10
"	20.....	..... - 9.50	9.10 - 9.35	8.75 - 9.00	10.40 - 10.50
"	27.....	..... - 9.80	9.40 - 9.75	9.00 - 9.25	..... - 10.65
Sept.	3.....	..... - 9.55	8.75 - 9.10	8.60 - 8.75	..... - 10.65
"	10.....	..... - 10.05	9.25 - 9.75	9.10 - 9.40	..... - 10.40
"	17.....	..... - 9.80	8.75 - 9.10	8.75 - 9.00	..... - 10.40
"	24.....	..... - 9.50	9.00 - 9.50	9.00 - 9.25	..... - 10.10
Oct.	1.....	..... - 9.40	8.50 - 9.40	8.85 - 9.00	..... - 9.75
"	8.....	..... - 9.20	8.50 - 8.75	8.70 - 8.90	..... - 8.75
"	15.....	..... - 9.00	8.50 - 8.75	8.55 - 8.75	..... - 9.00
"	22.....	..... - 8.80	8.25 - 8.40	8.55 - 8.75	..... - 9.50
"	29..	..... - 8.80	8.30 - 8.40	8.00 - 8.25	..... - 10.00
Nov.	5.....	..... - 8.80	7.90 - 8.25	8.00 - 8.10	..... - 9.75
"	12.....	..... - 8.90	.....	7.90 - 8.15	..... - 9.50
"	19.....	..... - 8.60	8.15 - 8.20	7.60 - 7.85	..... - 9.50
"	26.....	..... - 8.50	7.95 - 8.00	7.50 - 7.60	..... - 9.50
Dec.	3.....	..... - 8.40	8.05 - 8.10	7.55 - 7.65	..... - 9.25
"	10.....	..... - 8.50	7.90 - 7.95	7.55 - 7.75	..... - 9.25
"	17.....	..... - 8.50	7.75 - 7.80	7.50 - 7.70	..... - 9.25
"	24.....	..... - 8.50	8.05 - 8.10	7.50 - 7.65	..... - 9.50
"	31.....	..... - 8.80	8.60 - 8.75	7.70 - 7.90	..... - 9.75
1914.					
Jan.	7.....	..... - 8.90	8.70 - 8.75	8.05 - 8.20	..... - 9.75
"	14.....	..... - 8.90	8.60 - 8.65	8.15 - 8.20	..... - 9.75
"	21.....	..... - 8.90	8.70 - 8.75	8.20 - 8.40	..... - 10.00
"	28.....	..... - 8.90	8.65 - 8.70	8.20 - 8.35	..... - 9.75
Feb.	4.....	..... - 9.10	8.95 - 9.00	8.40 - 8.60	..... - 9.75
"	11.....	..... - 9.60	9.35 - 9.40	8.50 - 8.65	9.60 - 9.90
"	18.....	..... - 9.60	9.20 - 9.30	8.55 - 8.70	9.85 - 10.00
"	25.....	..... - 9.70	9.25 - 9.35	8.60 - 8.75	..... - 10.25
Mar.	4.....	..... - 9.70	9.10 - 9.15	8.55 - 8.70	..... - 10.20
"	11.....	..... - 9.70	9.10 - 9.15	8.60 - 8.80	..... - 10.00
"	18.....	..... - 9.45	9.15 - 9.30	8.70 - 8.85	..... - 9.25
"	25.....	..... - 9.65	9.35 - 9.40	8.75 - 8.85	9.85 - 10.00

NOTE—"F. and W." means "fed and watered"; "W. O. C." means "weighed off cars." Therefore to make a fair comparison 25 cents should be deducted from the latter quotations.

SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR LIVE HOGS each week from April 2, 1913 to March 25, 1914

Week.		Toronto.	Winnipeg.	Calgary.
		" Choice."	" Choice."	" Choice."
1913.		\$ F. and W.	\$ W. O. C.	\$ W. O. C.
April	2.....	9.85 - 10.00	.. - 8.50	.. - 8.50
"	9.....	9.50 - 9.60	.. - 8.50	.. - 8.50
"	16.....	9.35 - 9.50	.. - 8.75	.. - 8.50
"	23.....	9.45 - 9.50	.. - 8.75	.. - 8.50
"	30.....	9.65 - 9.75	.. - 9.00	.. - 8.50
May	7.....	9.70 - 9.75	.. - 9.25	.. - 8.75
"	14.....	9.80 - 9.85	.. - 9.00	.. - 8.75
"	21.....	9.80 - 9.85	.. - 9.75	.. - 8.75
"	28.....	9.80 - 9.85	.. - 9.00	.. - 8.75
June	4.....	10.00 - 10.10	.. - 9.00	.. - 8.75
"	11.....	10.00 - 10.10	.. - 9.00	.. - 8.75
"	18.....	10.10 - 10.15	.. - 9.00	.. - 8.75
"	25.....	9.40 - 9.50	.. - 9.00	.. - 8.75
July	2.....	9.00 - 9.25	.. - 9.00	.. - 8.75
"	9.....	8.90 - 9.15	.. - 8.50	.. - 8.75
"	16.....	9.50 - 9.60	.. - 8.50	.. - 8.75
				F. and W.
"	23.....	10.00 - 10.15	.. - 8.75	.. - 8.00
"	30.....	10.15 - 10.25	.. - 8.75	.. - 8.00
Aug.	6.....	10.15 - 10.25	.. - 9.00	.. - 7.25
"	13.....	10.15 - 10.25	.. - 8.00	.. - 8.00
"	20.....	10.15 - 10.25	.. - 9.25	.. - 8.50
"	27.....	9.90 - 10.00	.. - 9.25	.. - 8.50
Sept.	3.....	9.90 - 10.00	.. - 9.25	.. - 8.50
"	10.....	9.65 - 10.00	.. - 9.25	.. - 8.50
"	17.....	10.00 - .....	.. - 9.25	.. - 8.50
"	24.....	9.50 - .....	.. - 9.00	.. - 8.50
Oct.	1.....	9.10 - .....	.. - 9.00	.. - 8.50
"	8.....	8.85 - 9.00	.. - 9.00	.. - 8.50
"	15.....	..... - 8.60	.. - 9.00	.. - 8.50
"	22.....	..... - 9.00	.. - 8.75	.. - 8.50
"	29.....	..... - 9.00	.. - 8.50	.. - 8.25
Nov.	5.....	..... - 9.20	.. - 8.25	.. - 8.00
"	12.....	..... - 8.60	.. - 8.25	.. - 7.75
"	19.....	8.90 - 9.10	.. - 8.25	.. - 7.75
"	26.....	..... - 8.50	.. - 8.00	.. - 8.00
Dec.	3.....	8.50 - 8.60	.. - 8.00	.. - 8.00
"	10.....	8.10 - 8.25	.. - 7.75	.. - 7.00
"	17.....	8.35 - 8.55	.. - 7.75	.. - 7.00
"	24.....	8.65 - 8.75	.. - 7.50	.. - 6.75
"	31.....	9.00 - 9.25	.. - 7.50	.. - 6.75
1914.				
Jan.	7.....	9.00 - 9.25	.. - 7.50	.. - 6.75
"	14.....	9.00 - 9.25	.. - 7.85	.. - 6.75
"	21.....	9.10 - 9.25	.. - 8.00	.. - 7.00
"	28.....	..... - 9.00	.. - 8.00	.. - 7.00
Feb.	4.....	9.35 - 9.50	.. - 8.00	.. - 7.50
"	11.....	9.25 - 9.50	.. - 8.25	.. - 7.75
"	18.....	9.45 - 9.50	.. - 8.35	.. - 7.75
"	25.....	9.00 - 9.10	.. - 8.40	.. - 8.25
Mar.	4.....	9.10 - 9.25	.. - 8.40	.. - 8.25
"	11.....	9.10 - 9.25	.. - 8.05	.. - 8.25
"	18.....	9.10 - 9.25	.. - 8.05	.. - 8.20
"	25.....	9.00 - 9.25	.. - 8.35	.. - 8.50

5 GEORGE V., A. 1915

WHOLESALE QUOTATIONS FOR LIVE CATTLE each week from April 2, 1913, to
March 25, 1914.

(From "Canadian Farm" and "National Provisioner.")

Week.		New York.	Buffalo.	Chicago.	Montreal.	Toronto.	Winnipeg.	Calgary.
		Good to Choice.	Good to Choice.	Good to Choice.	Good to Choice.	Good to Choice.	Good to Choice.	Good to Choice.
1913.		\$	\$	\$	\$	\$	\$	\$
April	2....	8.25 - 9.35	8.00 - 9.00	8.50 - 9.10	6.90 - 7.75	6.40 - 7.10	6.25 - 7.25	6.50 - 7.25
"	9....	8.40 - 9.50	8.00 - 9.00	8.50 - 9.20	6.90 - 7.75	6.40 - 7.25	6.25 - 7.25	6.50 - 7.25
"	16....	8.20 - 9.20	8.00 - 9.50	8.50 - 9.10	6.90 - 7.50	6.40 - 7.15	6.50 - 7.25	6.50 - 7.25
"	23....	8.00 - 8.85	8.00 - 9.50	8.50 - 9.25	6.75 - 7.50	6.40 - 7.15	6.25 - 7.25	6.50 - 7.25
"	30....	8.00 - 8.85	8.00 - 9.50	8.50 - 8.90	6.75 - 7.40	6.60 - 7.10	6.50 - 7.25	6.50 - 7.50
May	7....	7.85 - 8.85	7.50 - 8.45	8.50 - 9.10	6.75 - 7.50	6.50 - 6.90	6.25 - 7.40	6.50 - 7.50
"	14....	7.70 - 8.75	7.50 - 8.25	8.50 - 8.90	6.75 - 7.75	6.50 - 7.25	6.50 - 7.50	6.50 - 7.50
"	21....	7.65 - 8.65	8.10 - 8.50	8.50 - 8.85	6.75 - 7.75	6.50 - 7.25	6.50 - 7.40	6.50 - 7.50
"	28....	7.65 - 8.75	7.75 - 8.35	8.50 - 8.75	6.75 - 7.75	6.50 - 7.25	7.25 - 8.00	6.50 - 7.60
June	4....	7.50 - 8.40	7.75 - 8.35	8.50 - 8.75	6.75 - 7.75	6.50 - 7.75	7.25 - 8.00	6.50 - 7.60
"	11....	7.65 - 8.75	7.75 - 8.35	7.50 - 8.75	6.75 - 7.75	6.75 - 7.75	6.50 - 7.75	6.50 - 7.75
"	18....	8.00 - 9.00	8.00 - 9.00	7.50 - 9.20	6.50 - 7.65	6.25 - 6.80	6.50 - 7.25	6.50 - 7.75
"	25....	7.90 - 9.00	8.00 - 9.00	7.60 - 9.00	6.50 - 7.50	6.25 - 6.70	6.75 - 7.75	6.50 - 7.75
July	2....	8.00 - 9.00	8.00 - 9.00	7.60 - 9.00	6.50 - 7.40	6.50 - 7.00	6.50 - 7.50	6.50 - 7.75
"	9....	7.85 - 9.00	8.00 - 9.00	7.60 - 9.00	6.25 - 7.25	6.25 - 6.90	6.50 - 7.50	6.50 - 7.75
"	16....	7.85 - 9.25	8.25 - 9.25	7.80 - 9.15	6.45 - 7.40	6.25 - 6.90	6.50 - 7.50	6.50 - 7.75
"	23....	7.75 - 9.25	8.25 - 9.00	7.90 - 9.10	6.50 - 7.25	6.25 - 6.80	6.50 - 7.50	7.00 - 7.50
"	30....	7.60 - 9.00	8.25 - 9.00	8.75 - 9.10	6.25 - 7.00	6.00 - 6.60	6.50 - 7.50	6.75 - 7.25
Aug.	6....	7.40 - 9.10	8.40 - 9.00	8.75 - 9.00	6.50 - 6.90	6.10 - 6.80	6.50 - 7.25	6.75 - 7.50
"	13....	7.25 - 9.00	8.25 - 9.00	8.50 - 9.20	6.50 - 7.00	6.10 - 6.80	6.00 - 7.00	7.00 - 7.15
"	20....	7.25 - 8.75	8.25 - 9.00	8.50 - 9.00	6.40 - 6.70	6.10 - 6.50	5.50 - 6.50	7.00 - 7.15
"	27....	7.40 - 8.75	8.25 - 9.00	8.50 - 9.10	6.40 - 7.00	6.00 - 6.80	5.25 - 5.75	6.75 - 7.00
Sept.	3....	7.85 - 9.20	8.25 - 9.00	8.50 - 9.10	6.40 - 7.00	6.00 - 6.80	5.25 - 5.75	6.75 - 7.00
"	10....	7.70 - 8.90	8.25 - 9.00	8.50 - 9.10	6.50 - 7.00	6.00 - 6.90	5.60 - 6.25	6.60 - 7.00
"	17....	7.60 - 8.90	8.25 - 8.60	8.50 - 9.25	6.50 - 7.00	6.25 - 6.80	5.00 - 6.10	6.25 - 6.75
"	24....	7.90 - 9.00	8.25 - 8.75	8.50 - 9.40	6.75 - 7.25	6.25 - 7.00	5.00 - 5.75	6.25 - 6.75
Oct.	1....	7.75 - 9.50	8.00 - 8.50	8.50 - 9.50	6.75 - 7.25	6.25 - 6.85	5.75 - 6.25	6.25 - 6.75
"	8....	7.85 - 9.00	8.00 - 8.50	8.50 - 9.50	6.00 - 6.75	7.00 - 7.75	5.75 - 6.25	6.25 - 6.75
"	15....	7.65 - 9.00	7.25 - 8.15	8.50 - 9.50	6.25 - 7.50	6.80 - 7.55	6.25 - 7.15	6.10 - 6.50
"	22....	7.60 - 8.85	7.50 - 8.50	8.50 - 9.60	6.25 - 7.25	6.50 - 7.25	6.10 - 6.50	6.10 - 6.50
"	29....	7.60 - 8.85	7.25 - 7.75	8.50 - 9.75	6.00 - 7.75	7.00 - 7.65	6.25 - 6.75	6.15 - 6.50
Nov.	5....	7.75 - 9.10	7.25 - 8.25	8.50 - 9.65	6.25 - 7.75	6.75 - 7.75	6.10 - 6.50	6.35 - 6.85
"	12....	8.25 - 8.90	7.35 - 8.25	8.25 - 9.80	6.50 - 7.75	6.50 - 7.50	5.75 - 6.25	6.35 - 6.75
"	19....	7.60 - 8.85	7.35 - 8.00	8.10 - 9.55	6.50 - 7.75	6.70 - 7.50	5.75 - 6.25	6.10 - 6.50
"	26....	7.60 - 8.75	7.50 - 8.25	8.10 - 9.25	7.50 - 8.25	7.00 - 7.75	5.75 - 6.35	6.25 - 6.85
Dec.	3....	7.75 - 8.85	7.75 - 8.75	8.10 - 9.25	7.50 - 8.25	7.25 - 8.25	5.75 - 6.25	6.25 - 6.85
"	10....	7.80 - 9.00	7.75 - 8.75	8.10 - 9.25	7.50 - 9.50	7.25 - 8.25	5.80 - 6.25	6.10 - 6.50
"	17....	7.95 - 8.75	7.75 - 8.25	8.25 - 9.60	8.50 - 9.00	7.75 - 8.90	6.00 - 6.50	6.00 - 6.50
"	24....	7.60 - 8.75	7.75 - 8.00	8.25 - 9.70	8.50 - 9.00	7.75 - 9.00	6.25 - 6.75	6.10 - 6.75
"	31....	7.75 - 9.00	7.75 - 8.50	8.50 - 9.70	8.50 - 9.00	7.75 - 9.50	6.35 - 7.00	6.00 - 6.75
1914.								
Jan.	7....	7.85 - 9.15	8.25 - 9.00	8.50 - 9.35	7.75 - 8.75	7.25 - 8.75	6.50 - 7.00	6.00 - 6.75
"	14....	7.85 - 9.00	8.00 - 9.00	8.75 - 9.50	7.25 - 7.75	7.25 - 8.50	6.40 - 7.00	6.10 - 6.75
"	21....	8.00 - 9.10	8.15 - 8.90	8.65 - 9.50	7.75 - 8.50	7.25 - 8.50	6.75 - 7.00	6.50 - 7.00
"	28....	8.00 - 9.00	7.75 - 8.90	8.65 - 9.50	7.50 - 8.25	7.80 - 8.65	6.75 - 7.50	6.50 - 7.00
Feb.	4....	8.00 - 9.00	8.00 - 9.10	8.65 - 9.50	7.50 - 8.25	7.50 - 8.50	6.75 - 7.50	6.50 - 7.00
"	11....	8.00 - 9.25	8.25 - 9.25	..... - 9.50	7.50 - 8.25	7.50 - 8.50	6.75 - 7.50	6.50 - 7.00
"	18....	8.10 - 9.25	8.50 - 9.25	8.50 - 9.50	7.50 - 8.75	7.75 - 8.50	6.50 - 7.50	6.50 - 7.00
"	25....	7.90 - 9.00	8.50 - 9.00	9.10 - 9.75	8.00 - 8.75	7.75 - 8.65	6.50 - 7.50	6.50 - 7.15
Mar.	4....	8.00 - 9.00	8.25 - 8.90	8.75 - 9.75	7.25 - 8.50	7.40 - 8.00	6.50 - 7.50	6.75 - 7.35
"	11....	8.15 - 9.50	8.25 - 9.25	8.75 - 9.70	7.00 - 8.25	7.30 - 8.30	6.25 - 7.75	7.00 - 7.35
"	18....	8.10 - 9.35	8.15 - 9.00	8.75 - 9.50	8.00 - 8.40	7.45 - 8.45	6.75 - 7.75	7.00 - 7.40
"	25....	8.15 - 9.30	8.25 - 9.25	8.00 - 9.70	8.10 - 8.75	7.75 - 8.35	6.50 - 7.75	7.00 - 7.25

SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR CASH WHEAT from April 7, 1913, to March 30, 1914.

(From "Free Press" (Winnipeg), and "Northwestern Miller.")

Week.	Minneapolis.	Chicago.	Winnipeg.	Liverpool.
	No. 1 Northern per bush.	No. 1 Northern per bush.	No. 1 Northern per bush.	No. 1 Northern (Manitoba) per bush.
1913.	Cts.	Cts.	Cts.	\$ Cts.
April 7.....	88	92 ³ / ₄	89 ⁷ / ₈	1.21 ¹ / ₄
" 14.....	86 ⁷ / ₈	93	89 ¹ / ₈	1.12 ³ / ₈
" 21.....	90	93 ³ / ₄	90 ³ / ₄	.....
" 28.....	90 ⁷ / ₈	94 ¹ / ₂	93 ³ / ₄	.....
May 5.....	89 ¹ / ₂	92 ¹ / ₂	..	1.15 ¹ / ₂
" 12.....	90 ¹ / ₂	92	93 ¹ / ₄	1.13 ¹ / ₂
" 19.....	91 ¹ / ₂	92 ¹ / ₄	93 ¹ / ₄	.....
" 26.....	92 ³ / ₄	94	95	.....
June 2.....	92	93 ³ / ₄	93 ³ / ₄	.....
" 9.....	91	93 ³ / ₄	..	.....
" 16.....	94 ¹ / ₂	95	99 ¹ / ₂	1.13 ¹ / ₂
" 23.....	92	94 ¹ / ₄	97 ³ / ₄	1.13 ¹ / ₄
" 30.....	91 ³ / ₄	95	96 ¹ / ₂	.....
July 7.....	91 ³ / ₄	93 ¹ / ₂	97 ¹ / ₂	1.13 ¹ / ₂
" 14.....	90 ⁵ / ₈	92 ¹ / ₄	97 ³ / ₄	1.13 ¹ / ₄
" 21.....	90 ¹ / ₂	92	97	1.13 ³ / ₄
" 28.....	87 ⁷ / ₈	92 ¹ / ₂	95 ¹ / ₂	1.13 ¹ / ₂
Aug. 4.....	88 ¹ / ₄	..	96 ¹ / ₄	.....
" 11.....	88 ¹ / ₄	91 ¹ / ₂	..	1.13 ¹ / ₂
" 18.....	88 ¹ / ₄	92	94 ¹ / ₂	1.12 ¹ / ₂
" 25.....	88 ¹ / ₄	..	94 ¹ / ₄	1.13 ¹ / ₄
Sept. 1.....	..	92 ² / ₃	..	1.11 ¹ / ₂
" 8.....	89 ¹ / ₂	94	88 ¹ / ₂	1.12 ¹ / ₂
" 15.....	87 ¹ / ₂	93	86 ¹ / ₂	1.11 ¹ / ₂
" 22.....	84 ¹ / ₄	91	83 ¹ / ₄	1.11 ¹ / ₄
" 29.....	85	..	83 ¹ / ₂	1.10 ¹ / ₄
Oct. 6.....	83 ³ / ₈	..	81 ¹ / ₂	.....
" 13.....	84 ¹ / ₂	..	81	1.08 ¹ / ₄
" 20.....	82 ¹ / ₂	88 ¹ / ₂	..	99 ³ / ₈
" 27.....	84 ¹ / ₄	89 ¹ / ₄	81 ¹ / ₄	99 ¹ / ₄
Nov, 3.....	84 ¹ / ₄	89 ¹ / ₄	81 ¹ / ₂	1.00 ¹ / ₂
" 10.....	84 ¹ / ₂	90 ¹ / ₄	82 ³ / ₈	..
" 17.....	84 ¹ / ₂	90 ¹ / ₄	85	1.00 ⁵ / ₈
" 24.....	84 ¹ / ₂	90	85	1.00 ¹ / ₂
Dec. 1.....	84 ¹ / ₂	90	83 ¹ / ₂	.....
" 8.....	86 ¹ / ₂	92	84 ¹ / ₄	1.02 ³ / ₈
" 15.....	86 ³ / ₈	92	83 ¹ / ₄	1.03 ³ / ₈
" 22.....	85 ¹ / ₄	..	82 ¹ / ₄	1.03 ¹ / ₂
" 29.....	85 ¹ / ₂	91 ³ / ₄	83 ³ / ₈	1.02 ¹ / ₄
1914.				
Jan. 5.....	87 ¹ / ₂	91	84 ¹ / ₂	.....
" 12.....	87 ¹ / ₂	..	85 ¹ / ₄	1.04 ¹ / ₂
" 19.....	87 ³ / ₈	93	85	1.04 ³ / ₈
" 26.....	88 ³ / ₈	..	86 ¹ / ₄	1.05 ¹ / ₄
Feb. 2.....	89 ³ / ₈	91 ⁷ / ₈	86 ¹ / ₂	1.05 ¹ / ₄
" 9.....	91 ¹ / ₂	..	87 ¹ / ₂	1.05 ¹ / ₂
" 16.....	92 ¹ / ₂	97	89 ¹ / ₄	.....
" 23.....	..	97	90 ³ / ₈	1.10 ³ / ₈
Mar. 2.....	93 ¹ / ₈	96 ¹ / ₂	91 ¹ / ₂	1.09 ¹ / ₂
" 9.....	92	96	89 ³ / ₈	1.07 ³ / ₈
" 16.....	92 ⁷ / ₈	97	90 ¹ / ₄	1.05 ¹ / ₄
" 23.....	93 ¹ / ₂	97	91	1.06 ¹ / ₂
" 30.....	91 ¹ / ₂	..	89 ³ / ₄	1.07 ¹ / ₂

5 GEORGE V., A. 1915

WHOLESALE QUOTATIONS FOR MALTING BARLEY each week from April 5, 1913, to
March 28, 1914.

(From "Weekly Northwestern Miller.")

Week.		Minneapolis.	Buffalo.	Milwaukee.	Toronto.	Winnipeg.
		"Best Malting" per bush.	"Best Malting" per bush.	"No. 2" per bush.	"No. 2" per bush.	"No. 3" per bush.
	1913.	Cts.	Cts.	Cts.	Cts.	Cts.
April	5.....	56	57-64	69-70	55-60	48½
"	12.....	57	60-68	68-70	55-60	50
"	19.....	57	56-62	69-70	55-60	49½
"	26.....	58	59-66	69-70	55-60	49½
May	3.....	58	55-62	69-70	55-60	48½
"	10.....	59	55-56	69-70	55-60	46½
"	17.....	60	55-65	68-69	55-60	47
"	24.....	60	58-70	68-70	55-60	47½
"	31.....	60	55-60	68-70	55-60	47½
June	7.....	58	57-62	68-70	55-60	46½
"	14.....	59	58-65	68-70	55-60	47½
"	21.....	58	57-60	66-68	55-60	48½
"	28.....	59	58-65	66-67	55-60	47½
July	5.....				55-60	48½
"	12.....	56	55-57	62-63	55-60	49
"	19.....	54½	59-60	62-63	55-60	47
"	26.....	56	55-57	63-64	55-60	46½
Aug.	2.....	57	56-58	63-64	55-60	45
"	9.....	61	60-65	65-66	55-60	45½
"	16.....	66	68-70	71-72	50-55	45½
"	23.....	70	76-80	75-76	50-55	46
"	30.....	69	70-75	74-75	50-55	45½
Sept.	6.....	73	72-78	76-80	50-55	48
"	13.....	70	70-72	80-81	50-55	48½
"	20.....	71	72-80	80-82	52-57	47
"	27.....	70	72-80	81-82	52-57	45
Oct.	4.....	70	70-71	81-82	52-57	45½
"	11.....	68	67-75	81-82	52-57	45
"	18.....	67	70-72	81	52-57	41½
"	25.....	66	69-78	80-81	56-58	41½
Nov.	1.....	67	68-80	81-82	58-61	43
"	8.....	66	66-78	80	58-61	43½
"	15.....	65	67-80	80-81	58-61	43
"	22.....	64	65-80	80-81	58-61	43½
"	29.....	68	72-78	79-80	60-63	42½
Dec.	6.....	69	65-75	78-79	60-63	42½
"	13.....	67	66-80	77-78	55-60	42
"	20.....	67	67-80	76-78	55-60	41½
"	27.....	66	67-80	76-78	55-60	41
	1914.					
Jan.	3.....	66	68-80	76-77	55-	41½
"	10.....	67	-80	77-78	55-57	41½
"	17.....	66	67-80	77-7	55-57	41½
"	24.....	64	67-76	75-77	55-57	41½
"	31.....	65	65-75	75-77	55-57	41½
Feb.	7.....	64	63-70	75-76	55-57	41½
"	14.....	64	60-75	72-73	55-57	42½
"	21.....	64	69-75	72-73	55-57	41½
"	28.....	63	65-78	72-73	55-57	45½
Mar.	7.....	62	63-72	65-69	55-57	45½
"	14.....	58	65½	66-68	55-57	45½
"	21.....	57		66-68	55-57	45½
"	28.....	56	65-75	65-68	55-60	45½

SESSIONAL PAPER No. 15a

WHOLESALE QUOTATIONS FOR SPRING WHEAT FLOUR, Second Patent, in sacks, in first week of each month from April, 1913, to March, 1914.

(From "Weekly Northwestern Miller.")

	New York.	Chicago.	Montreal.	Toronto.	Winnipeg.	London.	Liverpool.
Month.	F.O.B. New York.	F.O.B. Chicago.	Delivered to Retailers.	F.O.B. Toronto.	Delivered.	C.I.F. Quotation by Mills.	C.I.F. Quotation by Mills.
	Per 196 lb.	Per 196 lb.	Per 196 lb.	Per 196 lb.	Per 195 lb.	Per 196 lb.	Per 196 lb.
1913.	\$	\$	\$	\$	\$	\$	\$
April.	4.25 - 4.45	4.15 - 4.25	5.20	4.80	4.90	4.20	4.17
May.	4.35 - 4.60	4.30 - 4.50	5.20	4.80	4.90	4.37	4.33
June.	4.35 - 4.65	4.35 - 4.60	5.20	4.80	4.90	4.37	4.42
July.	4.40 - 4.65	4.30 - 4.50	5.40	5.00	5.10	4.37	4.37
August.	4.40 - 4.60	4.35 - 4.50	5.40	5.00	5.10	4.42	4.38
September ..	4.40 - 4.60	4.30 - 4.40	5.40	5.00	5.10	4.29	4.29
October.	4.25 - 4.50	4.00 - 4.30	5.20	4.80	4.90	4.12	4.12
November...	4.05 - 4.25	4.00 - 4.20	5.20	4.80	4.80	3.96	3.96
December. ..	4.10 - 4.25	4.00 - 4.25	5.20	4.80	4.80	3.99	3.99
1914.							
January.	4.10 - 4.30	4.00 - 4.30	5.20	4.80	4.70	4.09	4.12
February.	4.20 - 4.45	4.15 - 4.35	4.90	4.80	4.70	4.08	4.12
March. . . .	4.25 - 4.45	4.30 - 4.45	5.10	5.00	4.70	4.24	4.20

GRAVENSTEIN.

Date.	Halifax.	Montreal.	Toronto.	Winnipeg.	Boston.	New-York.	Chicago.	London. (Canadian).	Liverpool (Canadian).	Warsaw (Canadian).
1913.	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Sept. 10.....	3 50.....				3 00 - 4 00	2 00 - 3 00				
" 21.....	3 50.....	4 50.....	4 00.....	4 65.....	3 00 - 4 50	2 50 - 3 75			5 22 - 5 83	4 38 - 5 10
Oct. 8.....	3 50.....	4 50.....	4 00.....		3 00 - 4 00			4 62 - 5 10		4 86
" 22.....	4 00.....	4 25.....	4 25.....	4 85.....	3 00 - 4 00	2 50 - 3 75				
Nov. 5.....		4 75.....	4 50.....							

FAMEUSE.

Sept. 10.....		5 00.....	4 50.....							
" 24.....		5 50.....	4 50.....							
Oct. 8.....	3 00.....	6 00.....	4 75.....	7 50.....	3 00 - 5 50	2 25 - 4 00			6 80	7 53
" 22.....	3 00.....	6 25.....			3 00 - 3 50	2 25 - 4 00			4 68 - 6 56	5 95
Nov. 5.....	3 50.....	6 50.....	5 00.....	7 50.....	3 00 - 4 00	2 50 - 4 50	4 00 - 4 50			
" 19.....	3 50.....	6 75.....	5 50.....		3 60 - 4 00		4 00 - 4 50			
Dec. 3.....	3 50.....	7 00.....			3 00 - 4 00	2 50 - 4 75	4 00 - 4 50			
" 17.....	3 50.....	7 25.....			3 00 - 4 00					
" 31.....		7 25.....		5 00.....	3 00 - 4 00					

GREENING.

Sept. 10.....		4 00.....		4 25.....	2 50 - 3 00	2 00 - 3 00				4 86 - 5 10
" 24.....		4 00.....	3 25.....		2 50 - 3 00	2 00 - 3 00			1 56	5 10
Oct. 8.....	3 50.....	4 00.....	3 50.....	4 25.....	2 50 - 3 00	2 25 - 3 25	2 50 - 3 00	4 62 - 5 10	4 62 - 5 59	4 62 - 4 86
" 22.....	3 50.....	4 25.....	3 50.....		2 50 - 3 00	2 50 - 4 50	3 25 - 3 50		3 65 - 4 50	- 5 59
Nov. 5.....	3 50.....	4 25.....	3 50.....	4 50.....	2 50 - 3 00	3 50 - 4 50	3 75 - 4 00		5 59	- 6 07
" 19.....		4 75.....	3 50.....		2 50 - 3 00	3 50 - 4 75	4 00 - 4 25		4 86 - 5 83	5 83 - 6 07
Dec. 3.....		4 75.....	3 50.....		2 50 - 3 00	3 50 - 4 50	4 00 - 4 25	4 86	- 4 80	4 86 - 5 34
" 17.....		4 75.....	3 50.....		2 50 - 3 00	3 50 - 5 50	4 00 - 4 25	- 5 34		- 3 89
" 31.....										
1914.										
Jan. 14.....		5 00.....	3 25.....		2 50 - 3 00	3 50 - 4 75	4 50			- 6 07
" 28.....		5 00.....	3 50.....		3 50 - 4 00	3 50 - 5 00	5 00 - 5 50			- 5 85
Feb. 11.....		5 00.....			3 50 - 4 00	3 50 - 4 75	5 00 - 5 25			

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" 25.....	5 25 -	3 50 - 4 00	4 00 - 6 00	5 00 - 5 25	6 07 - 6 32
Mar. 11.....	5 50 -	3 50 - 4 50	5 00 - 6 00	5 00 - 5 25
" 25.....	5 50 -	3 50 - 4 50	4 00 - 6 00	5 50 - 6 00

KING.

Sept. 10.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" 24.....	4 50 - ..	4 50 - ..	4 00 - ..	.....	3 00 - 3 50	2 50 - 3 50	3 00 - 3 50	.....	.....	7 05 - 8 51
Oct. 8.....	4 50 - ..	4 50 - ..	4 25 - ..	4 50 - ..	3 00 - 3 50	2 50 - 3 50	2 75 - 3 50	.....	6 07 - 7 53	6 07 - 7 17
" 22.....	4 50 - ..	4 50 - ..	4 50 - ..	.....	3 50 - 4 00	2 50 - 3 75	3 50 - 4 00	.....	4 98 - 6 19	6 44 - 7 43
Nov. 5.....	4 50 - ..	5 00 - ..	4 75 - ..	5 50 - ..	3 00 - 3 50	3 50 - 5 00	3 50 - 4 25	4 38 - 5 83	.....	6 56 - 8 51
" 19.....	4 50 - ..	5 00 - ..	4 75 - ..	.....	3 00 - 3 50	3 50 - 5 00	3 50 - 4 25	5 10 - 6 07	3 40 - 4 38	.. - 7 29
Dec. 3.....	5 00 - ..	5 25 - ..	4 75 - ..	5 50 - ..	3 00 - 3 50	3 50 - 5 00	3 75 - 4 25	.....	3 95 - 4 86	.....
" 17.....	5 00 - ..	5 25 - ..	4 75 - ..	.....	3 00 - 3 50	3 50 - 5 00	3 75 - 4 25	.....	.....	.....
" 31.....	.....	5 50 - ..	4 50 - ..	.....	3 00 - 3 50	3 50 - 5 00	3 75 - 4 25	.....	.....	.....
1914.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jan. 14.....	.....	5 50 - ..	.....	6 50 - ..	3 00 - 3 50	3 50 - 5 00	5 00 - 5 50	.....	.....	.....
" 28.....	.....	5 75 - ..	.....	.....	3 00 - 4 50	4 00 - 5 25	5 50 - 5 75	.....	.....	.....
Feb. 11.....	.....	5 75 - ..	.....	.....	3 00 - 4 50	4 00 - 5 00	5 50 - 5 75	.....	.....	.....
" 25.....	.....	6 00 - ..	.....	.....	3 00 - 4 50	4 00 - 5 50	5 50 - 5 75	.....	.....	.....
Mar. 11.....	.....	6 00 - ..	.....	.....	4 00 - 5 00	5 00 - 6 25	5 50 - 5 75	.....	.....	.....
" 25.....	.....	6 00 - ..	.....	.....	4 00 - 5 00	4 00 - 5 50	5 50 - 5 75	.....	.....	.....

BALDWIN.

1913.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sept. 10.....	.....	.....	.....	.....	.....	2 00 - 3 00	.....	.....	.....	.....
Oct. 24.....	.....	4 00 - ..	.....	4 50 - ..	.....	2 00 - 3 25	.....	.....	.....	.....
" 8.....	.....	4 00 - ..	3 25 - ..	.....	2 75 - 3 00	2 00 - 3 00	3 00 - 3 25	.....	.....	4 50 - 5 22
Nov. 22.....	.....	4 25 - ..	3 50 - ..	5 25 - ..	2 75 - 3 00	2 00 - 3 00	3 25 - 3 50	4 25 - 5 34	5 59 - 5 95	.....
" 5.....	.....	4 25 - ..	3 50 - ..	.....	2 75 - 3 00	2 00 - 3 50	3 25 - 4 00	5 34 - 6 32	6 07 - 6 68	.....
Dec. 3.....	4 00 - ..	4 50 - ..	3 75 - ..	5 25 - ..	2 75 - 3 75	4 00 - 4 50	2 50 - 4 00	5 83 - 6 07	6 07 - 6 32	.....
" 17.....	4 00 - ..	4 50 - ..	3 75 - ..	.....	2 75 - 3 75	3 50 - 4 75	4 00 - 4 25	5 83 - 6 07	5 34 - 6 32	.....
" 31.....	4 00 - ..	4 75 - ..	3 50 - ..	.....	3 50 - 4 00	3 75 - 4 75	4 00 - 4 25	.. - 5 59	5 46 - 6 92	.....
1914.	.....	.....	.....	.....	.....	4 00 - 5 00	4 00 - 4 25	.....	.....	.....
Jan. 14.....	4 00 - ..	4 75 - ..	3 50 - ..	.....	3 50 - 4 00	3 75 - 5 25	4 25 - 4 50	6 44 - 6 60	4 86 - 6 07	.....
" 28.....	4 00 - ..	4 75 - ..	3 75 - ..	.....	4 00 - 4 25	3 75 - 5 25	5 00 - 5 50	6 07 - 6 32	5 34 - 6 32	.....
Feb. 11.....	4 00 - ..	4 75 - ..	4 00 - ..	.....	4 00 - 4 25	3 75 - 5 25	5 00 - 5 50	6 32 - 6 56	6 07 - 7 29	.....
" 25.....	4 00 - ..	5 00 - ..	4 25 - ..	6 25 - ..	4 00 - 4 25	4 00 - 5 50	5 50 - 5 75	6 68 - 7 65	6 89 - 7 05	.....
Mar. 11.....	.....	5 25 - ..	4 50 - ..	.....	4 00 - 5 00	5 00 - 6 25	5 50 - 6 00	.....	.....	7 29 - 8 51
" 25.....	.....	5 25 - ..	5 50 - ..	6 25 - ..	4 00 - 5 00	4 00 - 5 50	5 50 - 5 75	.. - 7 05	.....	.....

WHOLESALE QUOTATIONS PER BARREL for eight varieties of No. 1 Apples, &c.—Continued.

SPY.

Date.	Halifax.	Montreal.	Toronto.	Winnipeg.	Boston.	New York.	Chicago.	London. (Canadian.)	Liverpool. (Canadian.)	Glasgow. (Canadian.)
1913.	\$	\$	\$	\$	\$	\$	\$	\$	\$	%
Sept. 10										
" 24										
Oct. 8		4 50 -								
" 22		4 75 -		5 00 -						
Nov. 5		5 00 -	4 00 -			3 50 - 5 00	3 50 - 4 00			5 59 - 5 83
" 19		5 00 -	4 00 -			3 50 - 5 00	3 50 - 4 00	5 83	5 59 - 6 32	6 56 - 7 17
Dec. 3	4 00 -	5 25 -	4 50 -	5 50 -		3 50 - 5 00	3 75 - 4 25	5 83 - 6 07	5 59 - 5 95	6 07 - 6 32
" 17	4 00 -	5 25 -	4 75 -			3 50 - 5 00	3 75 - 4 25	4 38 - 6 07	5 71 - 6 07	4 38 - 4 86
" 31	4 00 -	5 50 -	5 00 -	5 50 -		3 50 - 5 00	3 75 - 4 25			5 10
1914.										
Jan. 14	4 50 -	5 50 -	5 25 -			3 50 - 4 50	4 00 - 4 50		5 34	
" 28	4 50 -	5 75 -	5 25 -	4 75 -	3 50 - 5 00	3 50 - 5 50	4 50 - 5 00		5 59	
Feb. 11	5 00 -	6 00 -	5 50 -		3 50 - 5 00	3 50 - 5 50	5 50 - 6 00		6 44	5 83 - 6 32
" 25	5 50 -	6 25 -	5 75 -	6 50 -	3 50 - 5 00	4 00 - 6 00	6 50 - 6 00			
Mar. 11	6 00 -	6 50 -	6 00 -		3 50 - 5 00	5 00 - 6 25	5 50 - 6 00		7 78	6 80 - 7 29
" 25	6 00 -	6 75 -	7 00 -	7 50 -	3 50 - 5 00	4 00 - 6 00				8 02 - 8 51

BEN DAVIS.

1913.										
Sept. 10										
" 24										
Oct. 8						2 00 - 3 00	2 00 - 2 25			
" 22		3 75 -				2 00 - 3 00	2 00 - 2 25			
Nov. 5		3 75 -	3 00 -			2 00 - 3 00	2 50 - 3 00	4 13	3 65	4 13
" 19		4 00 -	3 00 -			2 25 - 3 25	3 00 - 3 50	3 89 - 4 13	4 62 - 4 86	4 88 - 4 71
Dec. 3	4 00 -	4 25 -	3 00 -			2 25 - 3 25	3 00 - 3 50	4 13 - 4 86	4 86 - 5 10	4 88 - 4 86
" 17	4 00 -	4 25 -	3 00 -			2 50 - 3 75	3 00 - 3 50	3 89 - 4 13	5 34 - 5 59	4 88 - 4 62
" 31	4 00 -	4 25 -	3 00 -			4 00 - 5 00	3 00 - 3 50	4 38 - 4 86		4 86 - 5 83
1914.										
Jan. 14	4 00 -	4 75 -	3 00 -	5 75 -			3 50 - 4 00	4 13	5 10 - 5 46	5 10 - 5 83
" 28	4 00 -	4 75 -	3 25 -		3 00 - 3 50		3 75 - 4 25	4 38 - 4 62	5 22 - 5 44	4 62 - 5 34
Feb. 11	4 00 -	5 00 -	3 50 -		3 00 - 3 50		3 75 - 4 25	4 38 - 4 86	5 22 - 5 59	5 59 - 6 07

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APPENDIX III.

REPORT OF THE FRUIT DIVISION.

THE STAFF.

The arrangement made at the beginning of the season 1912-13, whereby the country was divided, for inspection purposes, into five districts with a chief inspector in charge of each, was continued during this season as it had proved most satisfactory during the previous year. The staff of 51 inspectors (16 permanent and 35 temporary) was distributed as follows:

District No. 1, Maritime Provinces.—G. H. Vroom, Chief Inspector.

Halifax.—A. S. Alcorn, W. C. Healy, Stuart Dimock, George Akins, W. E. Anderson, A. T. Morse.
 Annapolis Valley, N.S.—W. Bishop, F. B. Westcott.
 Cape Breton, N.S.—J. W. Chisholm.
 Lunenburg and Queens, N.S.—Howard Osborne.
 Prince Edward Island.—C. M. Williams.
 New Brunswick.—S. L. Peters.

District No. 2, Quebec and Eastern Ontario.—W. W. Brown, Chief Inspector.

Quebec City.—E. Bedard.
 * Montreal.—F. L. Deary, E. H. Wartman, J. A. Jones, F. T. Curley
 Lake Ontario Counties.—W. McCullough, Wallace McQuoid, William Armour.
 Ottawa Valley.—C. H. Snow.

District No. 3, Western Ontario.—R. R. Waddle, Chief Inspector.

Toronto.—W. G. Smith.
 Hamilton to St. Catharines.—F. L. Gabel.
 St. Catharines to Niagara.—Byron Honsberger.
 Lake Erie Counties.—George Connor.
 Inland Counties.—J. J. Pritchard, Moses Unger.
 Lake Huron Counties.—A. E. Durnin.
 Georgian Bay.—G. B. Carnahan.
 Sault Ste. Marie.—George Honsberger.
 Lake Superior.—† Evor Leonard.

District 4, Prairie Provinces.—C. W. Baxter, Chief Inspector.

Winnipeg.—Joseph Carman, Corbin Weld.
 Brandon.—J. H. Fleming.
 Regina.—J. W. Clement.
 Saskatoon.—R. J. Wallace.

* At the close of navigation, the Montreal staff is moved to Lake Ontario points.

† Transferred to Lake Ontario district after close of navigation.

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Medicine Hat.—Frank Metcalf.

Calgary.—M. P. McNeill.

Lethbridge.—J. H. McCauley.

Edmonton.—F. H. Steele.

District 5, British Columbia.—R. G. L. Clarke, Chief Inspector.

Vancouver.—A. H. Flack.

Vancouver Island—Henry Callow.

Interior.—A. McL. Fletcher.

Customs Officers acting as Dominion Fruit Inspectors.—

Nelson, B.C.—J. G. Bunyan.

Grand Forks, B.C.—W. J. Cook.

Prince Rupert, B. C.—J. H. McLeod.

In addition to his duties as packing expert and orchard demonstrator, Mr. P. J. Carey, owing to the illness of Col. W. W. Brown, acted as chief inspector in the Montreal and Lake Ontario District during the greater part of the season.

I regret to have to record the death of George Akins, temporary fruit inspector, at Falmouth, N.S., on March 4.

Mr. A. H. Flack, who was temporarily employed at Edmonton last season, was appointed, April 13, 1913, to the permanent staff to fill the inspectorship at Vancouver, B.C., left vacant by the resignation of Mr. D. M. Robertson.

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INSPECTION STATISTICS.

The following table gives comparative statements of the number of lots inspected, and the number of packages inspected for the seasons 1908-9, 1909-10, 1910-11, 1911-12, 1912-13 and 1913-14.

Variety.	No. of Lots Inspected.	No. of pkgs. in Lots Inspected	No. of pkgs. Inspected.
1908-09.			
Apples..... Brls.	5,940	682,657	42,223
"..... Boxes.	248	100,792	2,701
Pears..... "	88	54,150	7,924
Peaches..... "	91	140,976	16,005
Plums..... Baskets.	54	16,505	1,474
Tomatoes..... "	53	11,381	779
Small fruits..... Quarts.	863	1,184,651	154,874
1909-10.			
Apples..... Brls.	7,736	859,572	63,232
"..... Boxes.	902	157,939	7,363
Pears..... "	248	41,459	2,738
Peaches..... "	410	60,248	3,817
Plums..... Baskets.	264	62,883	4,257
Tomatoes..... "	149	50,943	3,241
Apricots..... Boxes.	11	12,495	481
Small fruits..... Quarts.	2,491	2,310,264	249,751
1910-11.			
Apples..... Brls.	4,527	360,768	26,890
"..... Boxes.	1,347	234,182	9,829
"..... Baskets.	171	17,551	10,393
Pears..... Boxes.	371	40,681	2,750
Peaches..... "	11	2,269	36
"..... Baskets.	383	70,564	5,932
Tomatoes..... "	56	6,570	601
Plums..... "	189	50,575	5,144
Small fruits..... Quarts.	1,502	568,510	155,048
1911-12.			
Apples..... Brls.	13,548	1,085,300	67,706
"..... Boxes.	1,235	162,249	10,178
Pears..... "	389	32,252	2,655
Peaches..... "	38	3,487	268
"..... Baskets.	365	34,606	2,864
Plums..... "	336	88,894	7,554
Tomatoes..... "	66	48,530	2,612
Small fruits..... Quarts.	2,120	2,729,143	298,591
1912-13.			
Apples..... Brls.	18,457	1,321,440	80,162
"..... Boxes.*	2,101	204,971	133,578
"..... Baskets.	119	16,249	2,719
Crab apples..... Boxes.	62	12,186	695
"..... Baskets.	17	1,395	660
Pears..... Boxes.	272	36,356	2,202
Peaches..... "	65	25,592	1,557
"..... Baskets.	121	18,837	2,139
Plums..... "	186	67,751	7,234
Tomatoes..... "	264	39,174	6,940
Small fruits..... Quarts.	1,187	2,264,559	172,945
1913-14.			
Apples..... Brls.	11,725	799,510	59,643
"..... Boxes.	2,631	341,679	29,879
"..... Baskets.	105	11,908	1,219
Crab apples..... Boxes.	192	13,250	1,462
Pears..... "	977	48,274	8,559
Peaches..... "	806	35,494	12,657
"..... Baskets.	353	60,771	7,564
Plums..... "	679	132,159	15,200
Tomatoes..... "	173	59,707	7,305
Small fruits..... Quarts.	736	1,128,907	95,841

* Corrected since last Annual Report, with addition of inspections in British Columbia.

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PROSECUTIONS.

Following is a list of those who have been convicted, during the season 1913-14, of violation of the Inspection and Sale Act, Part IX:—

Nova Scotia—

F. C. Bill, Billtown.
 J. D. Chambers, Newport.
 W. H. Chase, Wolfville.
 T. Chipman, Tupperville.
 E. W. Cogswell, Berwick.
 H. W. Forsythe, Greenwich.
 Grand Pre Fruit Co., Grand Pre.
 J. H. Harrington, Kentville.
 G. H. Illsley, Port Williams.
 G. E. Lamont, Billtown.
 J. S. Lamont, Billtown.
 I. Lingley, Cornwallis.
 T. G. Magee, Billtown.
 Wm. Maitland, Grand Pre.
 J. A. McDonald, Steam Mills.
 J. E. McGee, Port Williams.
 J. N. McGowan, Hillaton.
 J. T. Newcomb, Upper Dyke.
 New Minas Fruit Co., New Minas.
 Paradise Fruit Co., Paradise.
 W. O. Parker, Avonport.
 Rooney Bros., Windsor.
 J. D. Sanford, Burlington.
 Wm. Sharp, Windsor.
 Sheffield Mills Fruit Co., Ltd. Sheffield Mills.
 W. W. Smith, Windsor.
 A. Spurr, Perott.
 J. Timmins, Waterville.
 Waterville Fruit Co., Waterville.
 B. Woodworth, Church street.

Ontario—

W. J. Abernathy, Beeton.
 A. Auld, Watford.
 Carman Baker, Brighton.
 W. J. Bragg, Mgr., Bowmanville F. G. A., Bowmanville.
 Lorne H. Carey, Hamilton.
 C. M. Carruthers, Bowmanville.
 Clark & Collivar, Picton.
 H. B. Cockburn, Delhi.
 R. H. Collacott, Bowmanville.
 John Coyle, Colborne.
 John Coyle & Co., Bowmanville.
 R. O. Crook, Beamsville.
 Wm. Dickie, Burford.
 H. I. Donaldson, Woodstock.

Ontario.—Con.

Manly Duetta, South Bay.
 D. Ferguson, Picton.
 Harvey Fisk, Oastleton.
 Thomas Fitzgerald, Trenton.
 Flavelles, Ltd., Oshawa.
 Lincoln Fleming, Owen Sound.
 Oliver Fortran, Burnley.
 William Fox, Guelph.
 N. S. Gaffield, Colborne.
 Harry Groff, Trenton.
 Geo. A. Gummer, Colborne.
 Hugh Hanna, Carrying Place.
 Burton Head, Milford.
 Wm. Heideman, Shakespeare.
 C. B. Higgins, Trenton.
 J. P. Hughes, Picton.
 Lewis Jones, St. Thomas.
 John Joynt, Lucknow.
 Kelly Bros., Colborne.
 G. M. Knox, Cherry Valley.
 R. S. Lang, Toronto.
 R. S. Lang, Toronto.
 Morley Lemon, Owen Sound.
 A. Mallinson Co., Ltd., Norval.
 S. R. Maneer, Port Dover.
 D. C. Matthews, Colborne.
 A. R. McKenzie, Colborne.
 Milton, F. G. A., Milton.
 Wm. Mullin, Glen William.
 Neville & Bond, Mount Brydges.
 Neville & Bond, Mount Brydges.
 Orono F. G. A., Orono.
 C. Ostrander, South Bay.
 H. C. Pedwell, Thornbury.
 W. H. Phillipps, Belleville.
 W. H. Phillipps, Belleville.
 W. H. Polley, Trenton.
 Wm. Quick, Bowmanville.
 B. R. Robinson, Fish Lake.
 W. J. Roy, Tyrone.
 G. Saylor, Trenton.
 N. E. Sinclair, Freeman.
 A. J. Stephenson, Glen Oak.
 Charles D. Taft, Trenton.
 T. B. Taylor, Grimsby.
 Fred Terry, Bowmanville.
 John Vancleaf, Picton.

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Ontario—Con.

W. & F. Vandusen, Black River Bridge.

Geo. X. Walker, St. Catharines.

W. Walker, Burlington.

J. Whimpster & Co., Aurora.

Samuel Whittaker, Grimsby.

E. F. Warner, Stony Creek.

John Wilson, Ingersoll.

A. E. Wood, Stockdale.

British Columbia—

A. H. & J. Stevens, West Summerland.

Imported Fruit—

N. M. Johnson, Winnipeg, Man.

Scott Fruit Co., Lethbridge, Alta.

Scott Fruit Co., Medicine Hat, Alta.

Plunkett & Savage, Lethbridge, Alta.

Chess Bros., Vancouver, B.C.

On February 10, 1914, five boxes of pears, imported by George Vipond & Co., Winnipeg, Man., and not marked as required by the Act, were confiscated under section 320A (3) thereof.

THE FRUIT CROP REPORT.

During May, June, July, August and September, the Fruit Crop Report was regularly published on the 15th of the month. It was compiled from the reports of over 2,000 correspondents, and gave an accurate résumé of the crop prospects in the several provinces and in foreign countries, as well as general information regarding insects, fungous diseases, markets and other items of importance to the grower and to the merchant. A general outline of the fruit crop of 1913 follows:

THE SEASON OF 1913.

The winter of 1912-13 was a particularly favourable one to small fruits and to tree fruits. Growth continued perhaps too late in the fall of 1912, but as the trees were favoured with mild weather during the months of December, January, and even February, nothing serious resulted from that cause. Following a very mild spring, the weather became quite cold during May and the early part of June, heavy frosts being experienced throughout eastern Canada on June 7 and 8. Such conditions, coupled with a shortage of rainfall, resulted in quite a serious falling off in most varieties of fruit.

In apple production the season was below average. Early in the year, reports based upon the bloom were very favourable, but as the season advanced they became less optimistic. The development of apple scab in many sections, the remarkable severity of late spring frosts, the serious invasion of tent caterpillars, and other causes, all contributed to bring about a result which was not anticipated until the season was quite far advanced.

In Nova Scotia the crop of Gravensteins was decidedly short; in fact the only varieties which gave even a moderate yield were Blenheim, Ribston and Fallawater. Apple scab was extremely prevalent, and it was only where spraying was carried on thoroughly and persistently that the growers were able to hold it in check. For this reason there was of necessity a large quantity of inferior apples produced (a condition corresponding to that of 1912), and it was due to the co-operative methods of the United Fruit Companies that these apples were marketed in such large quantities and with so little waste.

In New Brunswick and Quebec the crop was a decidedly light one, greatly lowered in quality and yield by the ravages of the tent caterpillar early in the season. Many orchards were completely defoliated and it was no rare sight to see others which did not bear a dozen barrels of marketable apples. So far as reports go, the parasites which attack this insect were not present in sufficiently large numbers to greatly lessen the quantity of eggs laid in the late summer of 1913, but in a few isolated sections near Ottawa, a disease (probably bacterial), known as the 'Wilt Disease,' greatly

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reduced the caterpillar. In these sections it is not expected that the pest will be as destructive in 1914, but in other localities the growers will have to rely upon arsenical sprays for protection, and a concerted effort in any seriously infected locality will keep the pest under control.

There was considerable variation in the quantity of fruit harvested in different parts of Ontario, but if the province be taken as a whole it would average between 45 and 50 per cent of a full crop. In the southern and western counties of Norfolk and Lambton, which are the main producing counties in that section, the crop was even smaller. Farther inland in Oxford county and in the counties of Middlesex, Huron and Bruce, the orchards seemed to suffer particularly from dry weather, and the fruit was of small size. Fortunately these counties are well covered by co-operative associations, with the result that much of the fruit was of good quality, and some orchards, particularly in Huron county, which were comparatively free from the effects of spring frosts and which had received careful attention, bore a fair crop of fruit.

In the counties of Northumberland, Durham, Prince Edward and Ontario, where the bulk of the apple crop is produced, there was about half a crop. Early in the season indications were extremely favourable. Bloom was abundant, and spraying was so general that little damage was expected from tent caterpillar. Spys and Baldwins were the only two varieties that were not expected to yield heavily. As the dry weather continued the prospects fell off, until at the end of the season all reports indicated barely fifty per cent of a crop, with Spys and Baldwins quite as abundant as any of the fall and winter varieties. Much of the fruit was small in size, a condition which existed generally throughout the province.

In eastern Ontario the crop suffered from much the same causes as in Quebec: early frosts, unfavourable weather at blossoming time, apple scab and tent caterpillar. At no time during the entire season were reports, other than of the most pessimistic nature, received. This district, in the ordinary year, produces a large quantity of Fameuse and McIntosh apples. In 1913 the crop was light and much damaged by apple scab, and the season was, generally speaking, one of the most unsatisfactory which eastern Ontario and Quebec had experienced for many years.

In British Columbia the season opened somewhat later than usual, but some of the early apples were injured by frost early in May. On the lower mainland cold weather set in about blossoming time, and many of the blooms did not set fruit. In the inland valleys, climatic conditions were more favourable, though the wet weather caused a prevalence of scab, particularly in the Kootenay valley, where much of the fruit was practically ruined. This was the first season in which apple scab had been by any means serious in British Columbia, and will undoubtedly impress upon the growers the necessity for thorough spraying.

Reviewing the apple situation for 1913, it is evident that the season was universally one of the poorest experienced for many years. In no section was the yield an average one, and in many localities it was practically an utter failure. In Nova Scotia scab caused much damage to early varieties, particularly Gravensteins, with the result that practically none of these reached the prairie markets, and consequently large quantities were imported from the States further south to meet the demand. In eastern Ontario and Quebec the main source of trouble lay in the infestation of tent caterpillars, which reduced the crop to a very low ebb. Serious frosts in June and continued dry weather also intervened, and these were quite a dangerous factor in western Ontario. In British Columbia, an early frost, wet weather at blossoming time, a heavy drop in June, and the presence of apple scab, all contributed in causing a lighter crop than in 1912, and one which was not of the highest quality.

The peach crop was a very satisfactory one, both in British Columbia and the Niagara district. There was very little damage by frost except in some small isolated orchards which were situated outside the recognized peach zone. In the counties of

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Lambton, Kent and Essex, where considerable planting is being done, the yield was good. Several new orchards bore quite heavily and materially affected the market. Heavy shipments were made from Ontario to the prairie markets with very successful result. Reference is made elsewhere to the damage which was done to baskets in some of these shipments. British Columbia peaches were marketed quite largely in Alberta and Saskatchewan, and met with satisfactory prices. These markets are supplied to a great extent by American peaches, which mature earlier than those grown in British Columbia, and of course lessen somewhat the demand for the latter. In Ontario the plum crop was probably the largest harvested for many years. Several of the larger markets were over supplied; prices were consequently low, and much of the fruit was literally given away at points of production. In British Columbia there was also a heavy crop, particularly of the later varieties. In both these provinces, the early reports were quite unfavourable, as it was thought that the early spring frosts would greatly lessen the crop, but as the season advanced the reports were that, although many blooms had been destroyed by frost, much less damage was done than expected. In Nova Scotia the crop was a light one.

During the early part of 1913 it appeared as if pears would follow much the same course as apples, and that the crop would be small. In the commercial orchards of Ontario, however, the crop generally was excellent, Bartletts being particularly abundant. Practically all the commercial orchards gave satisfactory yields, in spite of the somewhat heavy 'June drop.' In Nova Scotia reports were never favourable, and many growers had almost a total failure. In British Columbia, too, pears were generally light and in the Kootenay valley were injured by scab, which was equally prevalent there on apples.

The prices received for pears were highly remunerative; the demand in British markets was very keen, and there were growers in the Burlington district who received astonishingly high prices. The demand for pears in Great Britain is a reasonably steady one, and the success of shipments made in 1913 should be a model lesson to wideawake growers.

Cherries were a very satisfactory crop. Some of the earlier varieties in British Columbia were softened by continued wet weather and rendered unfit for shipment, but the later sorts were in excellent condition. In eastern Canada the crop was quite as large as any harvested in previous years and the quality good.

For most of the small fruits the season was a disastrous one. Wet weather in British Columbia, continued drouth in Eastern Canada and early frosts in the Niagara district, generally lowered the strawberry crop. In some sections it was a complete failure, and the average for the Dominion was not more than 60 per cent of a full crop. Raspberries, too, were a short crop, though greatly helped by rains early in July. Currants and gooseberries were a good crop.

DISTRIBUTION.

The spread of co-operation in the past few years has been a rapid one and an extremely successful one, except in one or two instances where failure has been due either to improper management or to organization under wrong principles. In every fruit-producing province, co-operation has undoubtedly gained a permanent foothold and a high reputation even among its former critics. Its advantages have been manifold. The members of co-operative associations have received very satisfactory prices for their fruit, and prices which have been much in advance of those paid to independent growers. In years of poor quality they have been able to dispose of their lower grades of apples at satisfactory figures and in quantities which would have been impossible under ordinary methods of marketing. Uniform grades have been adopted. Straight cars of the more popular varieties have been shipped where

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mixed cars had formerly been handled. The merchants and the consuming public have consequently received fruit of higher quality, better packed and of more uniform grade than ever before.

It is only within the past three years that these individual co-operative associations have become organized into central selling associations under capable management and with definite methods of distribution. In Nova Scotia, the United Fruit Companies were organized in 1911 and the Co-operative Fruit Growers of Ontario and the Okanagan United Growers of British Columbia were both formed during 1913. Undoubtedly the principal objective point of all such organizations should hinge upon improved distribution. No other feature of the fruit industry has been given more publicity, and no publicity has been more deserved, than this one. The scarcity of fruit in out-of-the-way places in years when the same fruit has been rotting at the points of production, has been due only to faulty distribution. The "gluts" which have been experienced in our leading markets practically every year are not the result of over-production but of poor methods of handling. The tremendously wide margin between prices paid *to* the grower and *by* the receiver are as much due to inadequate distributive methods as to the much abused middleman.

Let one instance of this be cited. In 1913 there were towns in the middle west which were literally starving for apples. Contracts for fruit had been made with reputedly honest companies, but as the season advanced these companies were offered higher prices by firms in the Old Country. The contracts in the west were deliberately broken, and in cases where a town may have been dependent for its entire supply upon one or two cars, this breach of contract was a serious and disappointing matter. There were several instances of this. Some of the contracts were filled at a later date when prices dropped abroad. Some were never filled. This cannot be too severely criticized. The success of a selling agency of any kind depends primarily upon honesty, and unless its main principle is "honesty first," and unless it maintains that principle, it cannot stand the test of time.

DEVELOPMENT OF THE EXPORT TRADE.

With the increase which has steadily taken place in fruit areas, it has become expedient for growers not only to systematize the distribution of their products in Canada, but also to make some study of the demand in other countries, and the means of catering to that demand. In Great Britain there has been for many years an excellent market for Canadian apples and pears, and within recent years a trade in peaches has also been created. The bulk of the apples is received from Ontario and Nova Scotia, although British Columbia has sent some shipments, and Quebec has also exported a small quantity. Reference has already been made to the excellent prices which were received for pears in 1913, and emphasis must be laid on the wisdom of developing that trade and supplying it with only the best fruit.

British Columbia has already developed quite a large trade with Australia, and in the season of 1913 exported over 31,000 boxes of apples to that market. The consumer in Australia seems to demand an apple medium to small in size, and some difficulty was reported to have been experienced in British Columbia in packing a suitable size without violating the requirements of the Fruit Marks Act for No. 1 apples. R. G. L. Clarke, chief inspector for British Columbia, referring to the Australian trade, reports as follows:—

While it is true that that trade calls for a smaller apple than most markets, yet the grading must be strictly adhered to as laid down in section 321 of the Inspection and Sale Act. British Columbia, Washington and Oregon are all shipping to the same market, on the same steamers and practically the same varieties of apples. They ship either No. 1 or No. 2, or Extra

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Fancy and Fancy, according to the grading rules of the association packing and shipping the fruit. If 175 is the smallest apple they pack in the Extra Fancy and No. 1 grade in Washington and Oregon, it is suicidal for British Columbia to try to grade down to 200 and 225 (and in some cases even smaller) for No. 1, and expect to successfully compete and hold their place in the markets. With the Western States raising their standards year by year on account of our competition, we must do the same in British Columbia, and the market must not be jeopardized either by selfishness or ignorance. I believe that the sizes most acceptable to the Australian trade are from 138 to 175 per box. Smaller sizes may be shipped, but they must be placed in the grade to which they belong.

South Africa has received fruit from Nova Scotia and also from British Columbia. That country would seem to be a very good one for Nova Scotian growers, for it is nearer the port of Halifax than Australia is to Vancouver. The box package appears to be more popular there than the barrel, and for that reason British Columbia fruit has hitherto found much favour. Nova Scotia growers seem to have already realized this, for in 1913 there were 7,271 boxes exported to South Africa from Halifax as against 2,291 barrels.

Continental Europe also receives a considerable quantity of apples from Canada, as will be noticed in the tables elsewhere in this report. There is every likelihood of that market being extended.

BOX PACKING IN ONTARIO.

A very large quantity of Ontario apples is shipped every year to the prairie provinces, and in Alberta and Western Saskatchewan (though in Manitoba and Eastern Saskatchewan to a smaller extent) it comes into direct competition with the apples of British Columbia and the Western States. The fruit from the latter sources has always been packed in boxes. Great care has been given to grading, to packing and to packages, with the result that the consumer has received an article of high quality, carefully packed in an artistic package. Boxes have gained so much popularity in the western market that Ontario growers who wished to cater to that market, have been forced to adopt it, and the number of boxes sent from Ontario to the west is increasing every year. Some of the more progressive growers have been successful in their efforts to pack apples skilfully in boxes, but by no means all of them. Lack of proper training has prevented some from putting up their fruit in the most attractive manner, and it has not always compared favourably with fruit packed in the west, with which it comes into competition. Until some further educational campaign is organized, we cannot expect our Ontario growers to pack apples in boxes with the same skill as growers who have never packed them in any other package.

To give a clearer idea of the situation in Ontario and in the West, extracts follow from the reports of our chief fruit inspectors in both districts:—

R. R. Waddle, Western Ontario.—"A great many Ontario growers have adopted the commercial box for the shipping of their fruit. There is no doubt a great demand for our boxed apples in the Canadian west, and a small percentage of the growers who have adopted this method of putting up their fruit, have gained a reputation for their own brand and are receiving a good price for their product. A very large percentage of the growers, however, never got away from the habit of packing with a ten per cent margin for inferior fruit, which had been their custom when packing barrels. The situation at the present time, then, is that many people buy the Ontario box with ten per cent of defective fruit. I have noticed many cases in Toronto where commission merchants had emptied the boxes into barrels and received a better price for the fruit.

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The commercial box being a neater package than the barrel, consumers would doubtless expect a better sample in a No. 1 box than in a No. 1 barrel, but if on opening a box of 100 apples they find ten defective specimens, they are not likely to again buy an Ontario box."

C. W. Baxter, Prairie Provinces.—"Ontario boxed apples showed a marked increase in number over any previous year, and while a few of these shipments compared most favourably with the Pacific coast packing, the greater number did not. In fact, the quality of the fruit was no better than that of the very ordinary barrelled stock, and the packing very poor.

"The consumer and retailer in buying fruit in barrels do not compare it with boxed fruit, but when, on the other hand, they buy boxed fruit from Ontario, they naturally compare it with the boxed fruit which they have been accustomed to buy from the Pacific coast, and they are very much disappointed if the comparison is not a favourable one. Last season, owing to the looseness of the pack, Ontario boxes did not contain the full weight. This is quite a consideration to the retailer who follows the custom in this market and sells his fruit by the pound. If eastern shippers of boxes expect to compete successfully in this market with western shippers, there must be considerable improvement in the quality of the fruit and in the style of the pack. There is undoubtedly a demand for the eastern grown apple in this market, but not in the manner in which they have been put up during recent years."

FRUIT INSPECTION.

A more comprehensive idea of the conditions which apply in the several provinces, and of the work done by the inspectors in each, will be given by a summary of each province in turn.

British Columbia.—The work of inspection was carried on under the direction of R. G. L. Clarke, who was assisted by three inspectors. These three covered Vancouver Island, the lower mainland, the Kootenay valley and points on the Crow's Nest line. Mr. Clarke had charge of the Okanagan valley.

British Columbia has developed her fruit industry very rapidly, and in 1913 a central selling agency was established in the Okanagan valley. Reporting on this Mr. Clarke writes: "The co-operative movement took a great step in advance with the organization of the Okanagan United Growers, comprising eight unions, with a central selling agency at Vernon under the management of R. Robertson. The soft fruits, such as cherries, apricots, peaches, plums and early apples, were mostly assembled at Vernon, where mixed cars were made up to supply the trade. Some few straight cars were shipped from Penticton, Summerland and Kelowna, and I was pleased to hear some of the Vancouver wholesale men speak very highly of cars of peaches and plums from the Okanagan, placing them among the best on the market this past season. During the season 1913-14 the Okanagan United Growers marketed about one-half the fruit in the district in which they operated, handling 42 per cent of the apples alone. Besides bringing the growers increased returns for their fruit, large savings were realized by purchasing supplies such as feed, flour, fertilizers, &c. Over \$10,000 has been saved in the purchasing of boxes alone. Although there was a good deal of criticism as to the methods adopted during 1913, it is pleasing to note that all the local unions were unanimous in endorsing the management and continuing their affiliation with the central selling agency."

A pre-cooling plant was established at Summerland in 1913 by the Provincial Department of Agriculture, having for its object the cooling of peaches and other soft fruits prior to shipment in iced cars. Mr. Clarke adds: "A number of investigations are being taken up along this line, prominent among which are the

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holding up of two or three days' pack for shipment in carload lots, and the adoption of the Brine Tank refrigerator cars for the fruit transportation. The season's work along this line was most satisfactory, as ten carloads of peaches were made up and shipped in this manner. Those shipped in Brine Tank cars carried in splendid shape, with one exception. The experiments indicate that to ensure the soft fruit against loss in transit, it is necessary to handle it promptly and place it in a low temperature as soon as possible after it is taken from the trees, and the solution of the problem is to equip cold rooms at the point of shipment, where carloads may be sent out."

Prairie Provinces.—Inspection in the prairie provinces is entirely different to that in any other section of the Dominion. Here the inspectors are in contact with fruit at the consuming end, and in a district where fruit from Eastern and Western Canada and from the United States is in competition.

This district, covering a very extensive territory, and directed by C. W. Baxter, is divided into nine subdistricts, with headquarters at Fort William, Winnipeg, Brandon, Regina, Medicine Hat, Lethbridge, Calgary, Edmonton and Saskatoon.

One of the most interesting features of the western trade in 1913 was the development of traffic in peaches with Ontario. The crop last year was a particularly heavy one. Many of the eastern markets were 'glutted,' and it was the first year in which this fruit had been sent to the west in straight carload lots. Mr. Baxter reports the situation as follows:—

"As a result of the very large peach crop in the Niagara district and on the Pacific coast, the market was at times much overstocked. The six-quart basket has become a very popular package here, and it is doubtful if there is at present a more suitable one for wide distribution. Shipping to the West in eleven-quart baskets (peaches, tomatoes, plums, etc.) should be discouraged. The weight on the fruit at the bottom of the package is too great, and results in bruised and decayed fruit and 'sloppy' packages. Some peaches which arrived in eleven-quart baskets, heaped up and covered with leno, were so bruised and decayed that they sold for little more than those in six-quart baskets.

"There was a very noticeable increase in the number of peaches from Ontario packed in boxes. The fruit was packed with excelsior at the bottom, sides and ends of the boxes, and while this protection may be necessary when shipping by rail and steamer, there is no apparent need for it when the shipments are all-rail and in carload lots. It is pleasing to note that most of these shipments arrived in excellent condition. The fruit was of good colour and compared most favourably with the best Pacific coast shipments.

"In the course of our work we have noted the different methods used in loading, and there are a number of growers who have not mastered this difficulty. Greater care should be observed. Several cars have reached this market loaded the full length, with no space whatever in the centre and without braces. The baskets received the full force of every 'Shunt' and this resulted in broken and bruised fruit."

Mr. Baxter also includes in his report some very interesting material as a partial explanation for the difference between the prices paid by the consumer and those paid to the grower: "It is universally agreed that this difference is too great. At the same time it must be remembered that it does not always mean profit. A considerable portion must go to pay losses caused either by decay in transit or otherwise. In order that the distributor may remain in business he must charge these losses to future shipments, whether they be of the same commodity or of another variety of fruit."

Reporting on the apple situation Mr. Baxter writes: "In 1913 the merchant in the West experienced some difficulty in securing sufficient fruit. Very few apples were received from Nova Scotia, and practically no early varieties from any of the eastern provinces. The merchants therefore depended for these apples upon the states

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of Wisconsin, Missouri and Iowa. Prices for winter apples remained very firm throughout the entire season. There was a considerable decrease in the quantity of apples received in the prairies from eastern Canada. In 1912-13 the amount was 256,000, and last season only 181,000, a decrease of 75,000 barrels."

Ontario.—Owing to the continued illness of Col. W. W. Brown who had charge of the inspection work in eastern Ontario and Quebec, it was found necessary to give to P. J. Carey the temporary supervision of that district. This, in addition to his other duties, placed a great deal of responsibility and arduous work upon Mr. Carey, and he is to be commended for the tactful and energetic manner in which he carried it on. Following is an extract from Mr. Carey's report, covering the more important features of his work: "A number of orchard meetings were held during the year, at which I took up the pruning, spraying and thinning of fruit, the proper planting of trees, the selection of varieties for different localities, and all matters pertaining to the better methods of fruit culture.

"Instruction work in the packing of apples was carried on all through the winter months, both in orchards and in packing houses. In some instances this work took the form of visits to packing gangs in the orchards, and in other cases demonstrations of box and barrel packing were given.

"I spent a week at the Short Course at the Agricultural College, Truro, N.S., three days at Macdonald College Short Course, and four days at a packing school in Kentville, N.S. At all of these demonstrations were given in apple packing.

"A number of meetings have been addressed during the year, including Farmers' Institutes, Farmers' Clubs, Co-operative Associations, Annual Meetings of Fruit Growers' Associations, &c. Judging at exhibitions was also done."

The work which Mr. Carey mentions above was all undertaken at intervals when inspection work was not pressing. Regarding the progress which has been made in apple packing in Ontario, Mr. Carey writes: "While the number of prosecutions might indicate that packing methods were still faulty, yet it can be truthfully said that the great bulk of the packers are making an honest effort to comply with the law. Owing to the fact that in many orchards there was little, if any, fruit of No. 1 quality this season, it was difficult for packers to do good work."

In western Ontario the work of inspection was under the direction of R. R. Waddle, assisted by nine inspectors. This section is largely devoted to the production of apples, with a comparatively large section in the southern portion growing tender fruits. Apple trees are being continually planted, and Mr. Waddle's services have been frequently required for educational work, more particularly in the pruning of young orchards.

Quebec.—In the province of Quebec plantings of apples are again being made. Old orchards are dying out, and it is gratifying to know that the younger generation is making some effort to raise the industry to the place which it formerly occupied. Several co-operative associations have been formed in the principal fruit-producing sections, and these, assisted by the Pomological Society and the Provincial Government, have done much to place the industry on a sounder basis. There are several sections throughout the province which might be devoted to profitable fruit production, and in these it is hoped that considerable extension will take place.

During the active shipping season there were five inspectors at Montreal. At the close of navigation these, with the exception of F. L. Dery, were removed to points on Lake Ontario, where large quantities of apples had been stored for later shipment. During the winter months Mr. Dery conducted the inspection work in Montreal, and visited from time to time other points of consumption throughout the province.

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New Brunswick.—The province of New Brunswick does not yet produce sufficient apples for home consumption, but the industry is expanding every year. Fruit land is comparatively cheap and excellent markets are close at hand, so that the development of this province as a fruit producing area may reasonably be expected. Much is being done in the extension of the small fruit industry, which is a very important one in the St. John River valley.

The enforcement of the Fruit Marks Act in New Brunswick is in the hands of S. L. Peters, who, in addition to his work of inspection, has done much educational work during the past few years. As a result of this, spraying and pruning have now become quite general, better fruit is being grown, and it is being graded and packed in a more careful manner.

Mr. Peters states that the number of apples exported from the Port of St. John during the past season was 20,030 barrels and 3,551 boxes, mostly grown, of course, in Ontario.

The standardizing of small fruit packages is a subject which has been given considerable attention in New Brunswick, and Mr. Peters has done a great deal of work in this connection. He reports as follows: 'A determined effort was also made to have the berry-box makers place none but the full quart box on the market. Much time was given to this effort, and I am glad to say that it was a very successful one. There were a few small boxes in some crates of berries that were not noticeable until removed from the crate. Notes were made of these instances and close attention will be paid to those shippers in the future. Shipments of small fruits arrive in St. John by the Intercolonial railway, by seven steamers plying on the St. John river and its tributaries, and by private conveyances from within easy distance. During the height of the strawberry season, the seven steamers alone land from 350 to 500 crates (54 boxes per crate) every other day.'

Nova Scotia.—Probably no other province in the Dominion has made so great and so rapid an improvement in its methods of orchard management as has Nova Scotia. Within the past two or three years spraying has become one of the most important duties of the progressive fruit grower, and instead of the power sprayer being the novelty which it was a few years ago, it is now becoming the necessity which modern horticulture demands it to be. Power sprayers have taken their place in the Annapolis valley and are undoubtedly there to stay. It is true that during the seasons of 1912 and 1913 there was an immense quantity of No. 3 apples produced. It must be remembered, however, that spraying is not yet by any means practised by every grower, that both 1912 and 1913 were unusually wet seasons and that conditions were consequently ideal for the development of fungous diseases and far from ideal for satisfactory and efficacious spraying. It is an indisputable fact that in a section where such a disease as apple scab is prevalent, the only satisfactory means of combating it and holding it in check, is the persistent application of recognized spray mixtures.

In the matter of thinning, too, Nova Scotia is making progress. Before experimental work was done in the thinning of fruit, it appeared a rather wasteful operation to remove between 15 and 25 per cent of the crop during the earlier stages of its development, but so satisfactory have the results been of this experimental work that growers are becoming more and more impressed with its importance.

G. H. Vroom had charge of the inspection work in Nova Scotia, assisted by ten inspectors. Six of these were stationed at the port of Halifax, two in the Annapolis valley, one in Cape Breton island and one in the counties of Lunenburg, Queens, etc.

The season of 1913 was an unfavourable one throughout the entire province, due to a mild spring followed by a cold period in May. Weather was unfavourable for pollenization and ideal for the growth of fungous diseases. The result was a light crop of inferior quality. A more complete report of the season in Nova Scotia is given under the heading 'Fruit Crop Report.'

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The following table prepared by Mr. Vroom gives the production of apples in Nova Scotia, and the main sources of consumption:—

Destination.	Barrels.	Boxes.
London.....	272,203	2,606
Liverpool	126,664	5,989
Hamburg.....	39,230	945
Glasgow.....	30,595	732
Newfoundland.....	11,423	
Hull.....	3,278	
South Africa.....	2,291	7,271
Manchester.	16,947	
Cardiff.....	53	
Birmingham.....	78	
Stockholm.....	50	
Aldershot	152	
Bermuda.	1,288	
Via St. John, N.B.....	7,995	1,600
Boston via Yarmouth.....	954	
Total export.....	513,201	19,143
Points on I.C.R.....	76,319	
N.B. local.....	25,000	
Halifax local	30,000	
Total crop.....	644,520	19,143

COMPARATIVE STATEMENT FOR FIVE YEARS.

Year.	Barrels.	Boxes.
1909-10.....	834,207	4,885
1910-11.....	321,513	3,161
1911-12.....	1,730,496	10,011
1912-13.....	983,229	24,199
1913-14.....	644,520	19,143

Prince Edward Island.—The province of Prince Edward Island grows only a comparatively small quantity of fruit, and practically none of it is exported. C. M. Williams, fruit inspector for the province, has consequently devoted most of his time to demonstration orchard work, attending meetings, &c. There seems to be no reason why this province should not extend its orchard acreage. High-class fruit—both large and small—can be grown, suitable fruit land is abundant, and excellent markets are quite close at hand.

AMENDMENT OF 1913.

In June, 1913, an amendment was made to the Inspection and Sale Act, Part IX, stating in part:—

“*Regulation 3.*—Every importer of fruit, or his representative, shall cause all grade marks as found on closed packages containing imported fruit to be completely removed, erased or obliterated when such grade marks are different to, or inconsistent with, the marking or branding required by sections 320 and 321 of the Inspection and Sale Act, or section 4 of these regulations.

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"*Regulation 4.*—Every importer, or his representative, of fruit shall cause all closed packages containing such imported fruit to be marked or branded in a plain and legible manner, in letters and figures not less than half an inch long, and in the following form:—

{ Place here the {	{ Place here the correct {
{ proper grade marks. }	{ name of the variety. }

IMPORTED BY

(Insert here the name and address of the importer.)"

In view of the fact that the greater part of imported fruit is marked in the prairie provinces, it may be interesting to quote from the report of Mr. Baxter, who had charge of the work in that market, in this connection: "Most of the fruit imported into this district is grown in the four northwest states of Washington, Oregon, Idaho and Montana, the latter being the only one with legislation which provides for the marking and for the grade marks, which are 'Extra Fancy,' 'Fancy' and 'Choice.' These are recognized by the trade to be equivalent to the Canadian grade marks 'Fancy,' 'No. 1' and 'No. 2.' The grade mark 'Choice' is the only one which is not very clearly defined. While its definition contains certain specifications, it also provides that 'this grade is provided to be used when market requirements justify'; 'this grade to be packed in accordance with trade requirements'; 'this grade shall be made up of all *merchantable* apples not included in the 'Extra Fancy' and 'Fancy grades.' In the states of Washington, Oregon, and Idaho, the majority of associations and individual shippers have adopted the same grade marks which are used in Montana, although a few use the designations of 'First Grade,' 'Second Grade' and 'Third Grade,' and some 'No. 1,' 'No. 2' and 'No. 3,' which are also recognized by the trade to be equivalent to the Canadian grade marks 'Fancy,' 'No. 1' and 'No. 2'."

BETTER FARMING SPECIAL.

During part of July and August the New Brunswick Government again ran a "Better Farming Special" through the farming sections of the province. Demonstrations and lectures were given by competent men on all phases of modern agriculture. Our fruit inspector for New Brunswick, Mr. S. L. Peters, accompanied the train. Meetings were addressed at the following points:—Keswick, Millville Station, Woodstock, Hartland, Florenceville, Bath, Red Rapids, Plaster Rock, Perth Junction, Harvey Station, St. Andrews, St. Stephen, St. George, St. John, Welsford, Hart Station, Canterbury, Fredericton Junction, and Rusagornish.

The total attendance at these meetings was 5,000.

The Ontario Government also conducted a similar series of meetings, at four of which (Belmont, Tillsonburg, Brampton, and Streetsville) Mr. P. J. Carey gave addresses.

MEETING OF CHIEF FRUIT INSPECTORS.

During the first week in May a meeting of the chief fruit inspectors from the various districts was held in Ottawa. A great deal of very helpful discussion took place regarding the provisions of the Inspection and Sale Act, and uniform opinions were formed of clauses upon which the inspectors had previously been, to some degree, at variance. Visits were made to the large fruit merchants in the city of Ottawa, and

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test inspections made in order that those having charge of this work might agree upon certain standards for the various grades and transfer their interpretation of these standards to the inspectors under their jurisdiction.

Those present were: G. H. Vroom, for the Maritime Provinces; W. W. Brown for eastern Ontario and Quebec; R. R. Waddle for western Ontario; C. W. Baxter for the prairie provinces; R. G. L. Clarke, for British Columbia; P. J. Carey, Dominion apple packing expert and those in Ottawa having supervision of this work.

APPENDIX IV.

REPORT OF THE CHIEF OF THE DAIRY DIVISION.

MR. GEO. H. BARR.

The most important work carried on by this division is that of cow-testing. There is no other aspect of the dairy industry to-day in which there is as much room for improvement as that of increasing the quantity of milk from the dairy herds and it is gratifying to note the increased interest that is being taken all over the Dominion in the testing of the individual cow. Dairy farmers are beginning to realize the advantage of *knowing* just what each cow is doing in her business of producing milk. Our cow testing work was extended considerably during the year, especially in the establishment of dairy record centres.

On March 31, 1913, there were eighteen dairy record centres in operation. On March 31, 1914, there were thirty-one dairy record centres, fourteen in Ontario, eight in Quebec, two in Prince Edward Island, four in Nova Scotia, two in New Brunswick and one in Saskatchewan. Several of these were established since January 1, 1914, and, of course, are only getting nicely into work for the coming season. In all these centres there is a recorder appointed by the department who devotes his time to visiting the farms, testing the samples from the individual cows and assisting the dairymen to improve their herds by improvement in feeding and breeding. The number of farmers keeping feed records is increasing every year. Getting the dairymen to keep an accurate account of the feeding of their cows is not always an easy thing to accomplish, but we believe it is one of the most profitable lines of work the recorders can follow. We are pleased to note, however, that the number of farmers keeping feed records is increasing each year and also that the use of pure-bred bulls is becoming more general.

In addition to the dairy record centres there are a great many cheese factory and creamery proprietors and makers in the different provinces who have patrons weighing and sampling the milk from their herds and bringing the samples to the cheese factories or creameries to be tested.

On March 1, 1913, Mr. H. W. Coleman, who had charge of the Perth record centre for two years, was appointed supervisor of the cow-testing work in Ontario with headquarters at Perth, Ont., and he has filled the position very satisfactorily indeed.

On July 1, 1913, Mr. I. Trudel, who had been supervisor in the province of Quebec, resigned. Mr. J. B. Trudel was appointed as his successor on January 1, 1914. Mr. Trudel is well qualified for the work, being well acquainted throughout the province and has had a wide experience in dairying.

REPORT OF THE DAIRY SUPERVISOR FOR THE MARITIME PROVINCES.

In the maritime provinces, the work is under the supervision of Mr. Harvey Mitchell, with headquarters at Charlottetown, P.E.I. It is gratifying to note the increased interest which is being taken in dairying in these provinces. The following is Mr. Mitchell's report:—

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CHARLOTTETOWN, March 31, 1914.

I hereby submit a short report on the dairy industry in the Maritime Provinces.

In reference to the cow-testing work there is a very general demand in the three provinces to have this work extended. At the present time, I have applications from several different sections wanting the work established outside of the record centres, principally in connection with agricultural societies and creameries. A few years ago I never received any applications of this kind. As to the results of the cow-testing work carried on by the Dairy Division, I could give a great many farmers' names who have doubled their returns per cow from the creamery in five years. I know of one creamery where there were over thirty patrons who received double the amount of money per cow from the creamery last year than they received five years ago. All these patrons have been doing more or less cow-testing while the other patrons at the same creamery who have not been following up cow-testing show little or no increase in their returns per cow. The hard competitions in Prince Edward Island, for prizes offered by the Dairymen's Association, show in some degree the interest being taken in cow-testing work. The entries for these competitions are nearly all from sections where the cow-testing work has been carried on and from men who have been following up the work from year to year.

The prizes offered last year by the Dunstaffnage Creamery and again this year by them and others is further evidence of the interest taken in the work of herd improvement. The following is a copy of the rules and regulations governing prizes offered at Dunstaffnage this year:—

Dunstaffnage Dairying Association.

DUNSTAFFNAGE, P.E.I., March 1, 1914.

DEAR SIR,—Through the interest taken and the results attained from the competition last year in connection with the Cow-testing Association, prizes will be offered this year as follows:—

Class 1.—For patrons who furnished \$250 worth or less of butter fat to the creamery in 1913.

To the patron who produces the first, second and third largest average amount of butter fat per cow from January 1 to December 31, 1914: 1st prize a silver medal; 2nd prize, \$5; 3rd prize, \$3.

Class 2.—For all patrons of the creamery.

To the patron who produces the largest average amount of butter fat per cow from the best six cows in his herd, from January 1 to December 31, 1914, a gold medal, donated by Dr. J. C. McDonald; and to the patron who produces the second largest average amount of butter fat per cow from the best six cows in his herd for the same period, a silver medal.

1. The patron must become a member of the Cow-testing Association.
2. No herd less than three cows will be allowed to compete in Class 1.
3. Figures will be taken from the Cow-testing Association record sheets as sent in by the patrons, and the directors of the association reserve the right for any of them or their representative to visit the farm of any competitor and make such verification as they may require.
4. No substitution of one cow for another will be allowed. A declaration must be made by each competitor as to the number of cows kept, that the weights of milk are correctly recorded and the samples taken according to the rules of the Cow-testing Association.

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5. The average amount of butter fat per cow in class 1 must be calculated on the basis of the total number of cows that the patron has been milking at any one time during the twelve months, January 1 to December 31, 1914.

Example.—If a patron begins to keep records in January, February or March with say only two cows in milk, and in April or at any other time a cow freshens, and in May or at any other time, another cow freshens, making in all four (4) cows, the patron is not debarred from competing, providing the total number of cows (4) is used for dividing the total butter fat to find the average butter fat per cow for the year. Larger herds the same.

We appreciate the co-operation of our friends in the east who were shipping their cream in by rail last year and, in addition to being eligible to compete in class 1, we offer a silver medal this year to the patron shipping cream by rail, who becomes a member of the Cow-testing Association and furnishes the highest average pounds of butter fat per cow to the creamery from January 1 to December 31, 1914.

Rules No. 2 and 5 to govern this award.

Any further information can be had from the manager of the creamery, who will also supply the necessary outfits, &c.

Yours respectfully,

WM. J. GIBSON,
B. R. BROWN,

Committee.

While the number of patrons of factories in Prince Edward Island is less than a few years ago, the gross returns to the patrons last year showed an increase over 1912 and there is no question that the milk was produced at a greater profit than ever before. There will be one new creamery at Wellington which will open about the 1st of June. The prospects are bright for an increased quantity of cream being shipped in to Dunstaffnage Central creamery by rail from Kings county.

In Nova Scotia there was a decided increase in the output of creamery butter, nearly 50 per cent more than in 1912, due in part to increased milk production, but largely to the new creameries established and the shipping of cream in by rail to the creameries. New creameries were opened this year at Stellarton, Bridgewater and Baddeck. Each creamery will serve a large section of country and the output of creamery butter should show an increase of at least 50 per cent over that of 1913.

There was an increase in the gross returns for cheese and butter in New Brunswick over that of 1912, and I look for a greater improvement this year. In the parish of St. Louis, Kent county, the creamery has not been in operation for a number of years and through the interest worked up by the cow-testing work in the district last year, they have decided to open their creamery this season. This creamery and the Central creamery at St. Hilaire are the only new ones that will be opened in 1914.

HARVEY MITCHELL.

I regret to report the death of Mr. I. L. Farrington, which took place at Woodstock, Ont., on March 22, 1914. Mr. Farrington was one of the first men appointed as a dairy recorder in 1911, and he had charge of the Woodstock Centre up to the time of his death.

A compilation of the records of the different centres has been made by Mr. C. F. Whitley, which will be found in Appendix V.

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THE BROME CREAMERY.

The Brome creamery in the village of Brome, Que., is operated upon the following basis: The Department of Agriculture owns the creamery and two skimming stations in connection therewith. The patrons deliver their milk and cream to the creamery and skimming stations, appoint and pay their own secretary-treasurer and salesman and deliver the butter to the station. The department pays all the other operating expenses and charges a commission on all butter manufactured of $2\frac{3}{4}$ cents per pound of butter from milk delivered, and $2\frac{1}{2}$ cents per pound of butter from cream delivered. The patrons receive the skim-milk and buttermilk.

The new creamery was opened for buttermaking on December 13, 1912, and has been in operation continuously ever since. During the winter months the supply of milk and cream was so small that the creamery was operated for several months at a loss. The object of running the creamery during the winter months is to encourage the production of milk in the winter when prices are usually very high. The quantity of milk received during the winter of 1913-14 was considerably greater than in the winter of 1912-13 and we hope that each year the loss on winter work will become less. During the past winter part of the output was sold as cream.

SKIMMING STATIONS.

Thirty-two farmers in the district of Brome Centre petitioned the department to erect a skimming station on the site of the old Brome Centre cheese factory, which was burnt in the fall of 1912. The station was erected at a cost of \$1,200. The building is 18 x 18 feet, constructed of wood, with concrete foundation and floor, and the roof finished with steel shingles. Milk was received at this station for the first time on May 12, 1913.

A similar petition signed by the patrons of the Owen's Corner cheese factory was received asking the department to either buy or assume control of the factory as a skimming station for the Brome creamery. The building, equipment and good-will of the business was purchased for the sum of \$1,000. The first milk was received for skimming on April 9. The building was in very bad repair and, after consideration, it was decided that it would be more economical to build a new building than to try and repair the old one. A contract for the erection of a new wooden building 18 x 20 feet, with concrete foundation and floor and steel shingle roof, was let for the sum of \$1,000.

The cream from both skimming stations is delivered to the Brome creamery by the man in charge at Brome Centre who provides the horse, the department providing the wagon, harness and cream cans.

Mr. V. West has been manager of the Brome creamery for two seasons.

I appreciate the interest and care that was taken in the work by those in charge at Brome creamery and skimming stations, especially with respect to the clean and attractive manner in which they have kept the buildings and surroundings.

Following is the statement of the business of the creamery and skimming stations from March 1 to December 31, 1913, prepared by the patrons' secretary and submitted to the patrons at their annual meeting held on March 12, 1914:—

Pounds milk received at Brome creamery	1,133,953
Pounds milk received at Brome Centre skimming station	485,255
Pounds milk received at Owen's Corner skimming station	675,157
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Total pounds milk received	2,294,365
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Pounds cream received at Brome creamery	50,985
Pounds cream received at Brome Centre skimming station	13,516
Pounds cream received at Owen's Corner skimming station	4,247
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Total pounds cream received	68,748
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Total pounds butter fat in milk and cream received..	102,688
Total pounds butter made	121,457
Total pounds cream sold	15,001
Total pounds fat in cream sold	5,996
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Total paid patrons at Brome creamery	\$19,199 24
Total paid patrons at Brome Centre skimming station	6,100 11
Total paid patrons at Owen's Corner skimming station	7,034 46
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	\$32,333 81
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The patrons are paid every two weeks and the average net value per 100 pounds of milk was as follows:—Payment from March 1 to May 3, 84.3 cents to \$1.09.4; from May 4 to August 24, 89.2 cents to 97.5 cents; and from August 25 to December 31, \$1.08.4 to \$1.64.7.

FINCH DAIRY STATION.

The Finch Dairy station has been in operation continually since the present building was opened on August 23, 1912. The work during the past year has been somewhat diversified. The equipment is such that both cheese and butter can be manufactured at the same time, or cream separated for shipment to the city. Butter was manufactured during the winter months of 1912-13 and up to June 14, 1913, with the exception of a few days when cream was shipped to Ottawa. Cheese was made from June 16 to November 18, 1913, with the exception of a few days in July and August when cream was again shipped to Ottawa. Butter was made from the Saturday nights' milk during the summer months. During July and August whey butter was made. Although every care was taken to keep the whey perfectly clean before separating, and a good culture used in the cream, the patrons preferred to pay 4 cents per pound more for the butter made from the cream skimmed from the Saturday nights' milk than for the whey butter. At the close of the cheese season, November 18, 1913, milk and cream was shipped to Montreal. One firm took the entire output of the station in milk and cream from December 6 to February 28, after which date they took only a limited supply of cream, the balance of the cream being made into butter.

Shipping milk and cream to Montreal during the winter months gave excellent returns to the patrons, as is shown in the annual statement. The patrons were required to take particular care to deliver clean sweet milk, which meant more work and greater cleanliness at the farms. It also meant extra equipment in the factory to handle and cool the milk and cream successfully. The prices received warrant the extra care necessary at the farms and also the extra equipment installed. The railway connections at Finch give the dairy station exceptional facilities for shipping milk and cream to Montreal and Ottawa.

The farmers in the Finch district never had an opportunity to dispose of their milk during the winter months until the station was established, and it is encouraging to report that the quantity of milk received during the winter of 1913-14 was almost

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double that received in the winter of 1912-13. The factory is still being operated at a small loss during the winter months, but we are hopeful that as the farmers see the advantage of winter dairying, they will provide themselves more generally with silos, better stables and better cows and produce enough milk in the winter to at least pay operating expenses.

The department charges the usual commission for making cheese of $1\frac{1}{4}$ cents per pound, and 3 cents per pound for butter, and pays all operating expenses, including the salaries of the secretary and salesmen. Both the whey and skimmilk is pasteurized.

When the department commenced to operate the factory at Finch in the spring of 1912, there was not a single cow being tested in the neighbourhood. One patron commenced testing his herd during the summer. In 1913 samples from 103 cows were tested at the factory. During the winter a cow-testing club was organized and we expect that during the season of 1914 there will be in the neighbourhood of 200 cows under test. Several pure bred bulls have been brought into the district lately. The manager Mr. B. A. Reddick, deserves much credit for the development of this interest in cow improvement in the district, and I appreciate the interest and faithfulness with which he and his assistants have carried on the general work of the factory.

The following statement was submitted at the annual meeting of the patrons held on March 5:—

STATEMENT OF BUSINESS AT FINCH DAIRY STATION FROM NOVEMBER 20, 1912, TO DECEMBER 31, 1913.

Month.	Lb. of Milk.	Lb. of Fat.	Lb. Butter Made.	Lb. Cheese Made.	Lb. Fat in Cream Sold.	Gross Value.	Making Charge.	Paid to Patrons.	Net Value per 100 Lb. of Milk.
						\$ cts.	\$ cts.	\$ cts.	% cts.
November	22,287	944	1,093			338.83	32.79	306.04	1.02
December	55,280	2,412	2,723			813.20	81.69	731.51	1.49
January	17,406	681	790			248.32	23.71	224.61	1.29
February	21,631	748	845			262.01	25.35	237.65	1.09
March	114,620	3,642	4,418			1,354.73	132.54	1,222.19	1.07
April	199,066	6,246	6,733		557	2,140.06	218.70	1,921.36	.96
May	403,175	13,209	11,663		3,717	4,352.45	461.40	3,891.05	.96
June 1 to 16	268,274	8,907	10,582			2,650.05	317.46	2,332.59	.87
June 17 to 28	204,403	6,841	604	17,656		2,494.05	238.82	2,255.23	1.10
July	469,129	15,659	1,557	38,831		5,511.45	561.80	4,949.65	1.05
August	291,590	9,989	1,110	21,237	1,077	3,445.57	318.89	3,126.68	1.07
September	282,720	*15,754	1,217	23,700		3,485.53	332.76	3,152.77	1.11
October 1 to 22	234,330	*13,431	1,487	20,568		3,087.43	301.71	2,785.72	1.19
October 23 to November 17	119,642	7,403	2,150	7,819		1,653.96	162.24	1,491.72	1.25
November 18 to December 13	59,649		112			1,082.52	59.65	1,022.87	1.71
December 15 to 31	34,393					662.56	34.93	627.63	1.82
Total	2,797,595	105,866	47,084	129,811	5,551	33,583.72	3,304.44	29,279.28	1.04

* Fat + 2.

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On account of the extra apparatus necessary in carrying on experimental work, it was found necessary in the spring of 1913 to build an addition to the factory for a storeroom.

EXPERIMENTAL WORK AT FINCH.—COMPARISON OF THE LOSS OR SHRINKAGE IN MAKING FULL-SIZED CHEDDAR CHEESE VS. FLATS AND TEN-POUND CHEESE.

Seven different lots were made in the months of June and July. Each lot consisted of two full-sized cheese, four flats and fourteen 10-pounders. The average weights were 77 pounds, 38 pounds and 11 pounds.

Exactly the same weight of curd was put into the different hoops in each lot from the regular factory curds, after being salted.

The cheese were paraffined on the seventh day after being taken from the press. They were kept in a cool curing room, the temperature never going above 62 degrees.

The average per cent of loss between the weight of the curd and the weight of the cheese when taken from the press was as follows: Full size, 6.23 per cent; flats, 6.66 per cent; 10-pounders, 7.22 per cent.

The following table gives the relative shrinkage of the cheese at the end of different periods after manufacture:—

—	7 Days.	14 Days.	21 Days.	28 Days.
	Per cent.	Per cent.	Per cent.	Per cent.
Full size.....	1.13	1.39	1.65	1.90
Flats.....	1.52	1.80	2.12	2.51
Ten-pounders.....	2.15	2.55	2.99	3.46

The following is the average per cent shrinkage between the weight of the curd and the weight of the cheese on different dates; also the price per pound each lot of cheese would have to sell for, to equal 12 cents per pound for the full-sized cheese.

—	Per Cent Shrinkage.	Price Per lb.
		Cts.
7th day—		
Full size.....	7.36	12.000
Flats.....	8.18	12.106
10 pounders.....	9.37	12.131
14th day—		
Full size.....	7.523	12.000
Flats.....	8.460	12.120
10-pounders.....	9.770	12.298
21st day—		
Full size.....	7.883	12.000
Flats.....	8.780	12.118
10-pounders.....	10.210	12.306
28th day—		
Full size.....	8.133	12.000
Flats.....	9.170	12.136
10-pounders.....	10.680	12.337

In addition to the loss in manufacturing, there is the extra work to be considered in making flats and 10-pounders.

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WHEY BUTTER.

Whey butter was made in June, July and August. Extra care was taken to keep the whey perfectly clean before separating. A tin box was placed under the taps in the vats and the whey forced into the receiving vat in the creamery with an ejector. A pure culture was used in the cream. Notwithstanding this, the patrons preferred to pay four cents a pound more for the creamery butter than the whey butter. The principal fault found was that the butter became soft very quickly when put on the table in hot weather. The average pounds of whey butter made from 1,000 pounds of milk was 2.03.

INSULATED MILK AND CREAM CANS VS. ORDINARY CANS.

A number of tests were made to determine the efficiency of an insulated milk and cream shipping can, as compared with an ordinary can. The insulated cans are made with double sides and bottom, leaving a space of about one and a half inches which is filled with insulating material. In making the tests the cans were filled with water at 48 degrees and then placed in a warm room with the following average results:—

	8 A.M.		1 P.M.		5 P.M.		Increase of Temp.
	Temp. of Room.	Temp. of Water.	Temp. of Room.	Temp. of Water.	Temp. of Room.	Temp. of Water.	
	deg.	deg.	deg.	deg.	deg.	deg.	
Ordinary cans.	66	48	74.5	61	80.5	78	30
Insulated cans	66	48	74.5	51	80.5	55	7

The insulated cans cost \$5 each, f.o.b. Chicago.

THE BABCOCK AND CASEIN TESTS.

A good deal of time was spent at the Finch Dairy station by members of the dairy staff in testing the patrons' milk for fat and casein, to ascertain the relation of casein and fat in the milk as shown by the Hart casein test and the Babcock test; also to get further information on the practicability of using the Hart casein test in paying for cheese milk under factory conditions.

SUMMARY OF THE WORK.

The men in charge of the work found it rather difficult to get duplicate tests of casein to read the same.

Correct and uniform temperatures are essential for accurate work with the Hart casein tester.

Variations in the temperature of the acetic acid made a greater difference in the test than did variations in the temperature of the milk or the temperature of the room in which the testing was done.

Low temperatures in the acetic acid gave too high readings and high temperatures too low readings.

Temperatures under 64 or over 70 degrees made a decided difference in the test.

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We cannot yet see how a cheesemaker could do his regular factory work and test the milk for both fat and casein, thus making the use of the casein test practically impossible unless special help is provided.

The per cent of casein as shown by the Hart casein test does not vary to the same extent as the per cent of fat in herd milk.

There is no constant relation between the per cent of casein and the per cent of fat in herd milk, but when a large number of tests are averaged, the richer milk shows a higher per cent of casein than the poorer milk.

EFFECT OF DIFFERENT TEMPERATURES ON THE HART CASEIN TEST. ALL THE SAMPLES TESTED WERE FROM THE SAME MILK.

EFFECT OF DIFFERENT TEMPERATURES in the Milk and Acetic Acid.

DIFFERENT TEMPERATURE IN MILK.			DIFFERENT TEMPERATURE IN ACETIC ACID.		
Temp. of Milk.	Temp. of Acetic Acid.	Per Cent Casein.	Temp. of Milk.	Temp. of Acetic Acid.	Per Cent Casein.
62	65	2.6	70	62	2.7
64	65	2.5	70	64	2.5
66	65	2.6	70	66	2.5
68	65	2.5	70	68	2.5
70	65	2.5	70	70	2.5
72	70	2.6	72	73	2.4
74	70	2.6	72	74	2.2
76	70	2.5	72	75	2.3
78	70	2.5	72	77	2.3

These figures show that a variation of 16 degrees in the temperature of the milk had practically no effect upon the result of the test.

There is practically no variation in the percentage of casein with the acetic acid at temperatures between 64 and 70 degrees, but below and above these temperatures there is a decided difference, the test increasing as the temperature is lowered, and decreasing as the temperature is raised.

There was only a variation of 4 degrees in the temperature of the room when the above tests were being made, 66 to 70 degrees.

A few samples are given out of hundreds of tests made of the milk delivered to the Finch Dairy station to show the variations that may occur in the per cent of fat and casein from day to day in herd milk.

Patron's Number.		Dates.						Averages.
		May 13.	May 14.	May 15.	May 20.	May 21.	June 12.	
1	Per cent fat.....	3.2	3.4	3.5	3.6	3.8	3.2	3.616
	" casein.....	2.3	2.2	2.5	2.3	2.4	2.5	2.366
2	Per cent fat.....	3.4	3.9	3.1	3.5	3.3	3.3	3.416
	" casein.....	2.2	2.6	2.4	2.3	2.3	2.5	2.388
5	Per cent fat.....	3.5	3.6	3.8	3.3	3.6	3.4	3.533
	" casein.....	2.1	2.4	2.5	2.5	2.5	2.8	2.466
9	Per cent fat.....	3.7	3.7	3.9	3.4	3.6	3.3	3.583
	" casein.....	2.6	2.6	2.5	2.6	2.6	2.4	2.550
12	Per cent fat.....	4.0	4.2	4.1	4.2	4.0	4.0	4.083
	" casein.....	2.2	2.6	2.4	2.6	2.4	2.5	2.450
15	Per cent fat.....	3.9	3.6	4.0	—	3.5	3.5	3.700
	" casein.....	2.6	2.4	2.3	—	2.5	2.4	2.440

These figures show that there is certainly a wide variation in both the fat and casein in herd milk as delivered to the ordinary cheese factory from day to day. We had no control over the care of the milk at the farms and, therefore, cannot give any reason for such variation in the fat test. The samples were taken from the weighing can as soon as the milk was poured into it from the patrons' cans.

In the milk from twenty-four patrons, tested seven times between May 21 and June 12, there were the following differences between the highest and lowest tests of fat and casein:—

FAT TEST.		CASEIN TEST.	
No. of Patrons.	Greatest Variation.	No. of Patrons.	Greatest Variation.
	Per cent.		Per cent.
1	.7	1	.5
2	.6	8	.4
4	.5	1	.35
11	.4	6	.3
1	.3	7	.2
5	.2	1	.1
24		24	

The average difference in the twenty-four fat tests was .4 per cent.

The average difference in the twenty-four casein tests was .306 per cent.

GEO. H. BARR.

APPENDIX V.

DAIRY RECORD CENTRES AND COW-TESTING.

During the year 1913 the general plan of cow-testing, as carried on in previous years by the Dairy Division, took a firmer grip on farmers. Many more records of individual cows have been received and compiled; and, judging by the greatly increased demand for milk record forms, especially those for daily weights, from farmers who keep their own records not sending them in to this office, this simple, common-sense plan of checking up the production of each cow in the herd is becoming a widespread practice.

The number of dairy record centres has been increased, and the recorders in charge at each centre speak unanimously of the vital interest taken by farmers in cow-testing.

Records were received of 15,946 cows owned by 1,686 dairymen. It is unfortunate that again this year many records have been kept for only a few months of the year. May we emphasize once more that in order to arrive at a fair knowledge of a cow's real value the record should be kept for the full period of lactation.

If cow-testing is to mean anything of real help to dairymen, it is self-evident that something more must be done than take a few weights and samples of milk at intervals, that is simply one means to the end in view. Substantial improvement of the herd is the object sought, accomplished first by weeding out the poorest cows, as discovered by their records. But cow-testing is doing far more than this. Notes will be found below not only of increases in the yield of milk and fat per cow, but of decided improvements in the whole tenor of dairy farming. For the use of the scales proves that better feeding, better breeding and better care of stock are things that pay and pay well. Hence it will be seen how remarkably far-reaching is the beneficial influence of cow-testing, especially when aided by the presence of the recorder.

CONTRASTS IN THE SAME HERD.

It is quite possible to find such strange variations in the production between cows in the same herd that it is a matter of astonishment that owners have not discovered long ago how altogether unsatisfactory it must be to take simply an average of all cows together. This will apply to the yield of one milking, or a day, week, month, or year. For when once part of all of the milk of all the herd is mixed in one can, it has passed beyond the stage when the spring scale in the stable will be of benefit. To reap the best results each cow's milk should be weighed regularly and separately.

What satisfaction can there be in striking an "average" when the individual yields for the year are as far apart as 12,535 pounds and 3,990 pounds? In other herds these differences are 5,922 and 1,620 pounds, 8,610 and 2,320 pounds, 11,955 and 4,460 pounds between cows in the same herd.

In yields of a month it is often found that one cow gave more milk and fat than two other mature cows.

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A comparison of records discloses facts that are remarkable. On one Ontario farm are found four cows, ages 12, 8, 5 and 4, that averaged during their entire lactation period only 2,344 pounds of milk, and 85 pounds of fat. On the register are a few cows that gave 5 and even 10 pounds of fat more than that in just *thirty days*.

TABLE 1.—Summary of all cows recorded for the Full Period of Lactation, 1913.

Province.	Number of Herds.	Number of Cows.	AVERAGE YIELD.		
			Milk.	Test.	Fat.
			Lbs.		Lbs.
Ontario	554	5,643	5,513	3·6	200·1
Quebec	260	2,532	4,512	3·9	176·2
New Brunswick	136	986	4,250	4·0	170·2
Nova Scotia	52	298	4,969	4·3	214·9
Prince Edward Island	60	389	5,261	3·9	203·1
Total	1,062	9,848	5,273	3·6	191·7
Weights only.	22	244	5,893		

At the dairy record centres in the following tables the testing was done by the official recorder in charge at each centre; at the other points, or for each cow-testing association, the testing was done by the maker at the local factory.

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TABLE 2.—Average Yields of Cows recorded for the Full Period of Lactation in the Province of Ontario, 1913.

Electoral District.	Name.	Number of Herds.	Number of Cows.	AVERAGE YIELD.		
				Milk.	Test.	Fat.
	<i>Dairy Record Centres.</i>			Lb.		Lb.
Stormont.....	Avonmore.....	56	695	5,209	3.4	178.7
Glengarry.....	Alexandria.....	32	392	4,699	3.5	167.9
Grenville.....	Farmers' Union.....	50	448	5,850	3.4	201.7
Hastings.....	Frankford.....	46	422	6,431	3.4	223.3
Kingston.....	Kingston.....	24	330	6,162	3.3	204.8
Perth.....	Listowel.....	55	568	6,379	3.3	213.6
Brockville.....	Mallorytown.....	26	410	5,729	3.5	199.7
Carleton ..	North Gower.....	52	482	5,362	3.4	186.4
Lanark.....	Perth.....	43	397	5,089	3.4	175.7
Peterborough.....	Peterborough.....	57	483	6,209	3.4	214.0
Woodstock.....	Woodstock.....	20	233	7,240	3.5	252.5
	<i>Cow Testing Associations.</i>					
Durham.....	Port Hope.....	2	9	4,805	3.5	169.9
Dundas.....	Winchester.....	1	17	5,633	3.3	196.5
Grenville.....	Prescott.....	2	38	6,905	3.3	227.4
".....	Spencerville.....	1	16	4,841	3.6	176.4
Glengarry.....	Tyotown.....	4	38	6,026	3.7	224.0
Ontario.....	Whitby, Weights.....	1	10	4,838		
Peel.....	Star.....	1	8	6,614	3.1	204.5
Prince Edward.....	Consecon, Weights.....	1	12	4,768		
Russell.....	Dalmeny.....	2	27	5,015	3.5	177.4
Renfrew.....	Renfrew.....	1	10	5,900	3.4	206.0
".....	Navan.....	4	56	5,447	3.5	191.6
Stormont.....	Finch.....	8	76	4,742	3.5	165.9
Algoma.....	Gore Bay.....	3	15	4,581	3.5	162.5
".....	Silver Water.....	1	6	4,436	3.7	167.6
Brant.....	Afford Junction.....	1	12	8,957	2.8	251.3
".....	St. George.....	1	17	6,740	3.2	217.6
Haldimand.....	Dunnville.....	1	3	4,601	3.3	153.6
".....	Selkirk.....	1	3	3,822	3.9	150.5
Halton.....	Milton.....	1	3	6,250	4.0	250.0
Lambton.....	Forest.....	3	14	6,011	3.6	216.1
Lincoln.....	Silverdale.....	14	71	5,816	3.8	227.0
Norfolk.....	Port Royal, Weights.....	1	5	6,747		
Oxford, N.R.....	Cassel.....	2	22	7,464	3.3	246.4
".....	German Union.....	5	29	5,765	3.2	186.3
".....	Innerkip.....	3	46	7,471	3.2	241.4
".....	Tavistock.....	2	12	5,516	3.2	175.6
Perth.....	Avonbank.....	4	40	6,224	3.3	209.1
".....	Black Creek.....	4	39	6,273	3.2	205.8
Waterloo.....	Baden.....	1	7	4,569	4.0	185.9
Welland.....	Bertie.....	2	14	6,034	3.6	222.3
Wellington.....	Guelph.....	16	132	6,308	3.4	219.1
".....	Guelph, Weights.....	1	9	8,232		
General average for the Province—						
Weights and tests.....		554	5,643	5,513	3.6	200.1
Weights only.....		18	193	6,086		

NOTE.—This table, and the similar table for each province, should contain a great many more cows, but it does not because records were received of a great number of cows for only four or five months.

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In the cow-testing associations at Avonbank, Alford, Black Creek, Cassell, Guelph and Prescott, Ont., are several individual yields of over 10,000 and 12,000 pounds of milk and 330 pounds of fat.

While the average at Avonmore dairy record centre is 5,209 pounds of milk and 178.7 pounds of fat for 695 cows in 56 herds, the variations in the divisions are all the way from 4,619 pounds of milk and 157.9 pounds of fat per cow for 50 cows, up to 6,194 pounds of milk and 208.3 pounds of fat per cow for 39 cows. The difference is thus 1,575 pounds of milk and 50 pounds of fat per cow.

One of the best herds is at Glenelg, where 7 cows average 7,308 pounds of milk and 252.7 pounds of fat per cow. This herd includes some individual yields of over 8,000 pounds of milk and 290 pounds of fat per cow.

In other herds, as at Gravel Hill and Boundary, are low yields of only 3,200 pounds of milk and 118 pounds of fat per cow.

In the Alexandria dairy record centre one of the best herds gives an average for 9 cows of 5,322 pounds of milk and 197 pounds of fat. One of the poor herds has an average yield for 11 cows of only 3,085 pounds of milk and 116 pounds of fat.

There are a few good individual yields as at Pine Hill and Glengarry of 6,600 pounds of milk and over 240 pounds of fat.

The Farmers' Union dairy record centre includes some good averages. For instance, 48 cows in 7 herds at Oxford Mills yield 6,368 pounds of milk and 214 pounds of fat. One herd of 18 cows at Patterson's Corners has an average of 7,543 pounds of milk and 239 pounds of fat.

Some good individual yields are 9,725 pounds of milk and 300 pounds of fat; 10,474 pounds of milk and 345 pounds of fat; 12,367 pounds of milk and 441 pounds of fat.

In one herd where the average of 15 cows stands at 8,933 pounds of milk and 291 pounds of fat, there are 7 individual yields of over 300 pounds of fat and one of 417 pounds.

At the Kingston dairy record centre are several individual cows with less than 150 pounds of fat, while some run up as high as 402 and 463 pounds. In one herd of 26 cows only two individuals give 200 pounds of fat and 9 cows give less than 4,000 pounds of milk.

In the Listowel dairy record centre, when considering the comparatively large number of cows, 568, the average is one of the best in Ontario, namely, 6,379 pounds of milk and 213 pounds of fat. Several individual yields are over 9,000 pounds of milk and 300 pounds of fat. One of the best cows has 13,364 pounds of milk and 468 pounds of fat to her credit.

It is the more strange, therefore, that supplying the same factory are cows giving only 3,500 and 3,200 pounds of milk and 132 and 103 pounds of fat. One herd of 7 cows has an average of only 146 pounds of fat. Other herds of 7 and 10 cows average more than twice as much. One herd of 18 cows has an average of 9,696 pounds of milk and 324 pounds of fat.

In the Mallorytown dairy record centre are also to be found some strong contrasts. While there are many good yields there are also several poor records. In one herd of 14 cows where the average is 6,089 pounds of milk and 197 pounds of fat, the best yield is 8,330 pounds of milk and 315 pounds of fat, but there are also 2 yields of only 2,640 pounds of milk and 87 and only 76 pounds of fat.

One of the best herds has an average of 8,455 pounds of milk and 279 pounds of fat from 19 cows, the best cow giving 440 pounds of fat, *almost six times* as much as the poor cow noted just above.

Another herd of 11 cows gives an average of 289 pounds of fat.

At the North Gower dairy record centre is one group of 119 cows with an average of 5,804 pounds of milk and 203 pounds of fat. While there is an occasional poor aver-

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age yield as, for instance, one of only 3,914 pounds of milk and 145 pounds of fat from 16 cows, there are also good herd averages of 233 and 256 pounds of fat.

Some good individual yields are over 10,000 pounds of milk and 342 pounds of fat.

At the Peterborough dairy record centre the variation at the separate branches is from 5,059 pounds of milk and 172 pounds of fat from 41 cows at Lang, up to 7,941 pounds of milk and 260 pounds of fat from 39 cows at Central Smith. If our factories could reckon on such an increase of 2,900 pounds of milk per cow there would be less need for worry over expenses. Cow-testing will speedily help towards this end.

Some of the best herd averages here are 7,682 pounds of milk and 243 pounds of fat from 12 cows, and 10,296 pounds of milk and 333 pounds of fat from 12 cows.

Two four-year-old pure-breds have records of over 19,100 pounds of milk and 556 pounds of fat.

A five-year-old grade has the poor yield of only 2,495 pounds of milk and 108 pounds of fat.

In several herds are contrasts of yields of milk and fat more than double that of others; in one herd is a yield of only 2,769 pounds of milk and 101 pounds of fat contrasted with 10,937 pounds of milk and 375 pounds of fat.

In one herd of 8 cows the lowest yield is 6,533 pounds of milk, and 5 cows average 12,965 pounds.

Close by in another herd is a four-year-old giving only 2,871 pounds of milk and 98 pounds of fat.

In the Perth dairy record centre the variation between branches is from 2,344 pounds of milk and 85 pounds of fat given by four cows at Middleville, up to 7,074 pounds of milk and 234 pounds of fat from 17 cows at Lanark. The 4 cows referred to are ages 12, 4, 8 and 5.

There are several poor heifers here giving less than 100 pounds of fat, which state of things might well cause some steps to be taken for better yields. Two four-year-olds in one herd give only 86 and 73 pounds of fat.

In one herd of 11 cows where the youngest is 5 years old the average is only 3,357 of milk, and 249 pounds of fat. There are few good individual yields of 8,000, 11,000 and 12,000 pounds of milk, and as high as 440 pounds of fat.

In another herd of 12 cows, including 2 three-year-olds the average is 7,642 pounds of milk, and as high as 249 pounds of fat. There are a few good individual yields of 8,000, 11,000 and 12,000 pounds of milk, and as high as 440 pounds of fat.

In the Woodstock dairy record centre there is the noteworthy average from 101 cows of 8,628 pounds of milk, 3.4 test, and 298 pounds of fat.

One herd of 19 cows averages 10,306 pounds of milk and 348 pounds of fat, including individuals giving 434 and 479 pounds of fat.

While in this centre there are a few records from mature cows of less than 4,000 pounds of milk and only 136 pounds of fat, we also have here an eight-year-old grade with the record of 19,585 pounds of milk and 701 pounds of fat, more than *five times as much*.

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TABLE 3.—Average Yields of cows recorded for the Full Period of Location in the Province of Quebec, 1913.

Electoral District.	Name.	No. of Herds.	No. of Cows.	Average Yield.		
				Milk.	Test.	Fat.
	<i>Dairy Record Centres.</i>			Lb.		Lb.
Pontiac.....	Shawville.....	37	314	4,709	3·5	168·0
Dorchester.....	Ste. Henedine ..	24	153	3,547	3·9	139·9
St. Hyacinthe.	St. Hyacinthe ..	50	485	4,742	4·0	191·5
Champlain.....	St. Prosper.....	46	441	4,513	3·8	174·8
Stanstead.....	Way's Mills.....	62	663	4,355	3·9	170·7
	<i>Cow Testing Associations.</i>					
Prome	Knowlton.....	2	34	4,938	4·4	219·3
Berthier.....	St. Damien de Brandon....	1	10	3,355	4·1	140·3
Compton.....	Martin's Corners ..	5	76	5,024	4·4	227·0
Drummond and Arthabaska. .	St. Germain de Grantham.	2	19	4,217	3·6	155·1
"	Drummondville... ..	4	20	3,854	3·7	145·0
Kamouraska.....	St. Paschal.....	1	8	3,345	3·8	129·9
Lotbinière.....	Ste. Emelie.....	2	15	3,797	3·8	144·5
Missisquoi.....	Cowansville.....	5	74	5,527	3·9	220·6
"	Dairy Valley.....	1	7	4,810	3·6	176·5
Richmond.....	Richmond and Melbourne.	3	35	5,766	3·9	225·0
Shefford.....	Waterloo.....	2	32	5,316	3·5	190·4
"	West Shefford.....	1	12	3,749	3·6	135·1
Stanstead	Hatley North.....	3	31	4,112	3·9	163·3
"	Kingscroft.....	5	56	3,844	3·7	141·8
General average for the Province.....		260	2,532	4,512	3·9	176·2

NOTE.—This table, and the similar table for each province should contain a great many more cows, but it does not because records were received of a great number of cows for only four or five months.

In the province of Quebec, though the general average yield per cow for 2,532 cows is 4,512 pounds of milk and 176 pounds of fat, the various districts in which testing was carried on by the Dairy Division offer strong contrasts. No fewer than sixteen districts have an average of less than 4,000 pounds of milk which affect considerably the good yields of milk and fat at Knowlton, Martin's Corners, Cowansville and Richmond.

In the Shawville dairy record centre some of the best herd average yields are 6 cows, 5,142 pounds of milk and 172 pounds of fat; 10 cows, 5,439 pounds of milk and 184 pounds of fat; 6 cows, 6,586 pounds of milk, and 216 pounds of fat.

These herds contain good individual cows giving as high as 6,597 pounds of milk and 225 pounds of fat; 9,063 pounds of milk and 219 pounds of fat and 10,875 pounds of milk and 394 pounds of fat.

In the Ste. Henedine dairy record centre two of the best herds are at St. Isidore, 9 cows, 4,418 pounds of milk and 172 pounds of fat; and St. Anselme, 13 cows, 4,296 pounds of milk and 167 pounds of fat.

The best individual yields are 5,125 pounds of milk and 201 pounds of fat; 6,960 pounds of milk and 236 pounds of fat.

In the St. Hyacinthe dairy record centre good yields of individual cows are: 7,055 pounds of milk and 280 pounds of fat; 7,070 pounds of milk and 323 pounds of

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fat; 7,530 pounds of milk and 341 pounds of fat; 8,564 pounds of milk and 348 pounds of fat; 9,832 pounds of milk and 379 pounds of fat; 9,904 pounds of milk ad 383 pounds of fat.

One herd showing a good average is of interest as being one composed of cows with a particularly even production. The 12 cows average 4,988 pounds of milk and 197 pounds of fat. In this herd, with the exception of one young heifer, each cow produces over 4,400 pounds of milk.

One of the good herds is at St. Hyacinthe le Confesseur, where 9 cows average 7,816 pounds of milk and 287 pounds of fat.

Close by this is a herd of 7 cows with an average of only 2,763 pounds of milk and 113 pounds of fat, the highest individual yield being from a ten year old, 3,440 pounds of milk and 145 pounds of fat.

In the St. Prosper dairy record centre two of the best herd averages are: 18 cows 5,870 pounds of milk and 221 pounds of fat; 6 cows, 6,300 pounds of milk and 252 pounds of fat. These herds contain good individual cows giving as much as 8,150 pounds of milk and 274 pounds of fat; 8,305 pounds of milk and 313 pounds of fat and 8,447 pounds of milk and 343 pounds of fat.

In the Way's Mills dairy record centre there is a difference in the yield of 1,576 pounds of milk and 64 pounds of fat between the average of the 175 cows at Way's Mills and the average of the 63 cows at Barnston.

The herd averages run all the way from 101 to 296 pounds of fat. In the best herd of 10 cows each individual with the exception of one gives over 235 pounds of fat. The best cow gave 8,972 pounds of milk and 435 pounds of fat.

TABLE 4.—Average Yields of Cows recorded for the Full Period of Lactation in the Province of New Brunswick, 1913.

Electoral District.	Name.	Number of Herds.	Number of Cows.	Average Yield.		
				Milk.	Test.	Fat.
	<i>Dairy Record Centres.</i>			Lb.		Lb.
Kings and Albert.....	Sussex.....	40	502	4,650	4·0	188 2
Westmorland.....	St. Joseph.....	84	378	3,503	3·9	138·1
	<i>Cow-Testing Associations.</i>					
Kings and Albert.....	Hampton.....	4	54	5,066	3·9	196 9
	Kingston.....	2	7	3,871	4·3	169·1
Sunbury and Queen's.....	Welsford.....	5	33	5,445	3·8	207·2
Westmorland.....	Forest Glen,.....	1	12	4,327	4·7	206·2
General average for the Province.....		136	986	4,250	4·0	170·2

NOTE.—This table, and the similar table for each province should contain a great many more cows, but it does not because records were received of a great number of cows for only four or five months.

Table No. 4 illustrates again very forcibly that wherever an “average” is given, inquiry may well step forward a pace or two. While the average for the 986 cows recorded in New Brunswick stands at 4,250 pounds of milk and 170 pounds of fat,

there are included in that average two such extremes as 150 cows with an average of only 2,878 pounds of milk, and 33 cows with an average of 207 pounds of fat.

Some of the individual cows at Hampton made good records of 251, 282 and 296 pounds of fat.

At the Sussex dairy record centre some good herds are: 16 cows with an average of 5,274 pounds of milk and 220 pounds of fat, including 4 cows giving over 250 pounds of fat, and one cow with 323 pounds; 13 cows averaging 6,842 pounds of milk and 286 pounds of fat, including 3 cows over 300 pounds of fat, and one giving 9,724 pounds of milk and 437 pounds of fat; 16 cows with an average of 6,730 pounds of milk and 259 pounds of fat.

In several herds are found good individual cows giving over 320 pounds of fat. Unfortunately there are also several mature cows giving less than 100 pounds of fat.

One of the best herds in the St. Joseph dairy record centre is that of 12 cows at Dorchester, with an average of 5,780 pounds of milk and 220 pounds of fat. The best cow gave 7,575 pounds of milk and 304 pounds of fat.

The general average yield for the province is lowered considerably by the poor yields in one or two sections. For instance at St. Louis the average for 150 cows is only 2,878 pounds of milk and 116.6 pounds of fat.

In the Sussex dairy record centre some of the good herd averages are: Norton, 13 cows 6,842 pounds of milk and 286 pounds of fat; at Sussex, 16 cows 6,730 pounds of milk and 259 pounds of fat; 11 cows 6,054 pounds of milk and 241 pounds of fat.

TABLE 5.—Average Yields of Cows recorded for the Full Period of Lactation in the Province of Nova Scotia, 1913.

Electoral District.	Name.	Number of Herds.	Number of Cows.	Average Yield.		
				Milk.	Test.	Fat.
				Lb.		Lb.
	<i>Dairy Record Centres.</i>					
Pictou	Scotsburn.....	42	225	4,623	4.3	198.0
	<i>Cow-Testing Associations.</i>					
Colchester.....	Brookfield.....	3	26	5,802	3.7	218.2
Kings.....	Kingston.....	1	13	7,409	4.3	325.5
Yarmouth.....	Yarmouth.....	6	34	5,691	4.9	283.5
General average for the Province.....		52	298	4,969	4.3	214.9

NOTE.—This table, and the similar table for each province should contain a great many more cows, but it does not because records were received of a great number of cows for only four or five months.

Though the general average yield for Nova Scotia is 4,969 pounds of milk and 214.9 pounds of fat for all the 298 cows, the figures in the respective localities show some great variations. For instance, the 26 cows at Brookfield average 1,789 pounds of milk and 59.8 pounds of fat more than the 18 cows at Malagash.

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In the Scotsburn dairy record centre a good herd average is 6,520 pounds of milk and 234 pounds of fat from 14 cows. The best individual yield is 10,062 pounds of milk and 386 pounds of fat.

This one cow gave more milk and fat than several lots of *three cows* each in different herds in the same locality.

TABLE 6.—Average Yields of Cows recorded for the Full Period of Lactation in the Province of Prince Edward Island, 1913.

Electoral District.	Name.	Number of Herds.	Number of Cows.	Average Yield.		
				Milk.	Test.	Fat.
	<i>Dairy Record Centres.</i>			Lb.		Lb.
Prince	Kensington	36	256	4,976	3·8	190·9
	<i>Cow-Testing Associations.</i>					
Queen's	Crapaud	9	32	5,880	3·8	222·5
Queen's	Marshfield	12	79	5,724	4·1	233·0
General average for the Province		60	389	5,261	3·9	203·1

NOTE.—This table, and the similar table for each province should contain a great many more cows, but it does not because records were received of a great number of cows for only four or five months.

As in the other provinces, the differences in the averages of the several districts in Prince Edward Island show some strong contrasts, though all are included in the general average yield of 5,261 pounds of milk and 203 pounds of fat for 389 cows. For instance, the 23 cows at Kinkora gave, on the average, 1,635 pounds of milk and 32 pounds of fat *less* than the 22 cows at North Tryon.

In the Kensington dairy record centre some of the good herd averages are: 6,346 pounds of milk and 229 pounds of fat from 12 cows; 6,673 pounds of milk and 233 pounds of fat from 9 cows; 6,398 pounds of milk and 263 pounds of fat from 6 cows.

Such good records do not shine in the general average because their lustre is dimmed by the contrasted herd averages of only 3,796 pounds of milk and 103 pounds of fat from 9 cows, and 3,516 pounds of milk and 146 pounds of fat from 4 cows.

Some of the good yields from individual cows are 8,908 pounds of milk and 278 pounds of fat; 8,195 pounds of milk and 314 pounds of fat; 7,580 pounds of milk and 336 pounds of fat; 8,520 pounds of milk and 413 pounds of fat.

At Marshfield, though the average yield of 79 cows is 5,724 pounds of milk and 233 pounds of fat, two herds show a strong contrast.

One, with 9 cows, has an average of 8,498 pounds of milk and 303 pounds of fat, *more than twice as much* as from a herd of 4 cows which average only 3,766 pounds of milk and 144 pounds of fat.

While the average for the 256 cows recorded at the Kensington, P.E.I., dairy record centre for the full period of lactation is 4,976 pounds of milk, 3·8 test and 190·9 pounds of fat, the averages at the three branches show considerable variation.

The yield at Kinkora is 822 pounds of milk per cow less than at Kensington, and at Dunk River it is 37.2 pounds of fat per cow less.

Several herd yields stand out prominently, such as 12 cows with an average of 229.7 pounds of fat; 9 cows giving 233 pounds of fat; 14 cows, 239 pounds; so that those owners of herds down in the 160 and 140 pound classes may take fresh courage from the success of their neighbours.

Many of the individual yields are good, such as 8,195, 8,457 and 8,908 pounds of milk containing 277, 278 and 314 pounds of fat. Such records should help to show that cows giving only about 3,300 pounds of milk and 130 pounds of fat should be counted as decidedly out of date and out of place on a real dairy farm.

TABLE 7.—Summary of Average Monthly Yields, 1913.

Month and Province.	Total Number of Herds.	Total Number of Cows.	Average Yield.		
			Milk.	Test.	Fat.
			Lb.		Lb.
January—					
Nova Scotia.....	32	166	578	4.3	24.8
Prince Edward Island....	20	71	670	3.6	24.0
New Brunswick.....	24	162	518	4.1	21.5
Ontario.....	182	1,055	551	3.6	20.1
Quebec.....	50	436	454	4.1	18.5
General average yield	308	1,890	533	3.8	20.4
" " weights only	29	150	573		
February—					
Nova Scotia.....	32	168	583	4.3	25.4
Ontario	187	902	702	3.5	24.8
Prince Edward Island.....	19	70	651	3.7	23.6
New Brunswick.....	25	163	567	4.1	23.3
Quebec.....	44	339	539	4.1	22.2
General average yield.....	307	1,642	641	3.8	24.2
" " weights only.....	26	112	625		
March—					
Prince Edward Island.....	25	103	753	3.6	27.4
Nova Scotia.....	33	169	631	4.3	26.9
Ontario.....	240	1,197	774	3.4	26.3
New Brunswick.....	28	189	585	4.1	24.1
Quebec.....	97	557	617	3.8	23.7
General average yield.....	423	2,215	707	3.6	25.6
" " weights only.....	49	187	696		
April—					
Prince Edward Island.....	26	116	704	3.8	26.5
Nova Scotia.....	48	248	596	4.4	26.0
Ontario.....	378	2,376	782	3.3	25.8
New Brunswick.....	53	426	588	4.0	23.4
Quebec.....	199	1,500	618	3.6	22.5
General average yield.....	704	4,666	701	3.5	24.6
" " weights only.....	81	486	772		
May—					
Ontario.....	580	4,918	881	3.3	29.3
Nova Scotia.....	50	289	612	4.3	26.3
Prince Edward Island.....	41	190	687	3.7	25.6
Quebec.....	306	2,698	683	3.7	25.3
New Brunswick.....	72	677	606	4.0	23.8
General average yield	1,049	8,772	786	3.5	27.5
" " weights only	36	295	808		

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TABLE 7.—Summary of Average Monthly Yields, 1913.—*Continued.*

Month and Province.	Total Number of Herds.	Total Number of Cows.	Average Yield.		
			Milk.	Test.	Fat.
			Lb.		Lb.
June—					
Ontario	623	6,065	936	3.3	30.8
Prince Edward Island.....	70	390	774	3.7	29.1
Nova Scotia.....	74	460	663	4.3	28.6
Quebec.....	410	3,855	709	3.7	26.2
New Brunswick.....	179	1,221	614	3.8	23.5
General average yield.....	1,356	11,991	815	3.5	28.4
" " weights only.....	34	318	905		
July—					
Prince Edward Island.....	76	483	776	3.7	29.2
Ontario.....	625	6,269	808	3.3	26.5
Nova Scotia.....	73	476	607	4.2	25.4
Quebec.....	407	4,010	630	3.8	23.9
New Brunswick.....	185	1,260	570	3.8	21.9
General average yield.....	1,366	12,498	717	3.5	25.2
" " weights only.....	26	268	835		
August—					
Prince Edward Island.....	73	474	690	3.6	25.2
Ontario.....	603	6,117	682	3.4	23.3
Nova Scotia.....	61	387	551	4.2	23.3
Quebec.....	354	3,500	540	3.9	21.3
New Brunswick.....	165	1,119	510	4.0	20.1
General average yield.....	1,256	11,597	619	3.6	22.6
" " weights only.....	24	253	647		
September—					
Prince Edward Island.....	66	424	660	3.9	25.5
Ontario.....	578	5,872	658	3.6	23.8
Nova Scotia.....	57	341	498	4.4	21.9
Quebec.....	296	2,865	488	4.2	20.2
New Brunswick.....	152	1,018	439	4.2	18.4
General average yield.....	1,149	10,520	585	3.8	22.3
" " weights only.....	27	252	712		
October—					
Prince Edward Island.....	60	367	575	3.9	22.7
Ontario.....	535	5,309	550	3.9	21.0
Nova Scotia.....	77	341	456	4.5	20.3
Quebec.....	253	2,408	405	4.3	17.6
New Brunswick.....	120	765	376	4.4	16.8
General average yield.....	1,045	9,190	495	4.0	19.8
" " weights only.....	25	246	588		
November—					
Nova Scotia.....	86	346	454	4.5	20.3
Prince Edward Island.....	48	300	483	4.0	19.3
Ontario.....	401	3,602	444	3.8	17.0
New Brunswick.....	100	591	314	4.5	15.5
Quebec.....	191	1,753	326	4.4	14.4
General average yield.....	826	6,592	406	4.0	16.4
" " weights only.....	33	314	511		
December—					
Nova Scotia.....	72	280	447	4.6	20.5
Prince Edward Island.....	32	175	464	4.2	19.4
New Brunswick.....	80	445	398	4.3	17.3
Ontario.....	254	1,951	448	3.8	17.0
Quebec.....	111	940	335	4.3	14.5
General average yield.....	549	3,791	415	4.0	16.8
" " weights only.....	43	285	383		

This table is arranged by provinces with the highest yield of fat per cow given first of each month. Ontario has the lowest average test each month.

The total number of records of individual cows made during the year was 3,166 for weights only, and 85,364 for weights and tests, a total of 88,530.

PERCENTAGE OF FAT.

TABLE 8.—Average Percentage of Fat during the Year 1913, by Provinces.

Province.	Total Number of Tests.	Total Pounds of Milk.	Total Pounds of Fat.	Average Per Cent of Fat.
Ontario.....	45,633	32,512,313	1,124,025.1	3.45
Quebec.....	24,825	13,884,912	540,905.2	3.90
New Brunswick.....	8,036	4,105,043	165,279.8	4.02
Nova Scotia	3,671	2,040,978	88,571.7	4.34
Prince Edward Island ...	3,163	2,103,651	80,006.4	3.80

These average tests correspond very closely with those of the last two years.

During 1913 the number of cows tested each month in the Dominion varied from 1,642, in February, to 12,498, in July, with a total of 85,364 tests of individual cows for fat during the year, for which the average was 3.66 per cent of fat.

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TABLE 9.—Average Percentage of Fat, by Months and Provinces, 1913.

Months.	Ontario.		Quebec.		New Brunswick.		Nova Scotia.		Prince Edward Island.		Total.	
	Number of Cows.	Aver- age Test.	Number of Cows.	Aver- age Test.	Number of Cows.	Aver- age Test.	Number of Cows.	Aver- age Test.	Number of Cows.	Aver- age Test.	Number of Cows.	Aver- age Test.
January.....	1,055	3·6	435	4·1	162	4·1	166	4·3	71	3·6	1,890	3·8
February.....	902	3·5	335	4·1	163	4·1	168	4·3	70	3·7	1,642	3·8
March.....	1,197	3·4	557	3·8	189	4·1	169	4·3	103	3·6	2,215	3·6
April.....	2,376	3·3	1,493	3·6	426	4·0	248	4·4	116	3·8	4,666	3·5
May.....	4,918	3·3	2,690	3·7	677	4·0	289	4·3	190	3·7	8,772	3·5
June.....	6,065	3·3	3,847	3·7	1,221	3·8	460	4·3	390	3·7	11,991	3·5
July.....	6,269	3·3	4,010	3·8	1,260	3·8	476	4·2	480	3·7	12,498	3·5
August.....	6,117	3·4	3,492	3·9	1,119	4·0	387	4·2	474	3·6	11,597	3·6
September.....	5,872	3·6	2,865	4·2	1,018	4·2	341	4·4	424	3·9	10,520	3·8
October.....	5,509	3·9	2,408	4·3	765	4·4	341	4·5	367	3·9	9,190	4·0
November.....	3,602	3·8	1,753	4·4	591	4·5	346	4·5	300	4·0	6,592	4·0
December.....	1,951	3·8	940	4·3	445	4·3	280	4·6	175	4·2	3,791	4·0

DAIRY CENSUS AT THE DAIRY RECORD CENTRES.

Following the general plan of previous years, each recorder took what may be termed a "dairy census" of herds in his district, a few details of which are presented below.

There are 7,659 cows in 724 herds in 21 centres reported on, as compared with 3,188 cows in 331 herds in 5 centres when this dairy record centre work was first undertaken in the year 1911.

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TABLE 10.—Dairy Record Centres, 1913, Summary.

Dairy Record Centre.	Total Number of Herds.	Total Number of Cows.	Average Yield per Cow.	Average Yield per Acre cultivated including Pasture.	Average Number of Cows kept per 100 Acres.	Average Feed Cost of 100 lb. Milk.	Average Cash Receipts per Cow with Milk at \$1 per 100 lb.	Estimated Cost of Feed per Cow.	Average Profit per Cow over cost of Feed.
			Lb. Milk.	Lb. Milk.		Cts.	\$ cts.	\$ cts.	\$ cts.
Alexandria, Ont	13	186	4,422	519	11	79	44 22	34 82	9 40
Avonmore, Ont.....	12	171	4,949	746	15	70	49 49	34 77	14 72
Farmer's Union, Ont	52	528	5,572	525	9	66	55 72	37 15	18 57
Frankford, Ont.....	14	163	6,359	511	8	55	63 59	35 56	28 03
Kingston, Ont.....	10	171	5,763	617	10	72	57 63	41 60	16 03
Mallcroytown, Ont.....	31	575	5,400	645	12	64	54 00	35 07	18 93
Perth, Ont.....	5	50	4,943	377	8	60	49 43	29 82	19 61
Peterboro', Ont.....	39	359	5,781	341	6	70	57 81	40 87	16 94
North Gower, Ont.....	17	184	5,381	537	10	57	53 81	31 13	22 68
Listowel, Ont.....	83	975	5,349	614	11	76	53 49	40 76	12 73
Woodstock, Ont	32	445	6,728	837	12	66	67 28	44 83	22 45
Totals and averages for Ontario	308	3,807	5,619	570	10	68	56 19	38 54	17 65
Shawville, Que.....	18	190	4,461	426	9	60	44 61	26 66	17 94
St. George, Que.....	15	125	3,201	237	8	80	32 01	25 67	6 34
St. Henedine, Que.....	35	290	3,500	306	9	87	35 00	30 43	4 57
St. Hyacinthe, Que.....	100	950	4,363	341	8	75	43 63	33 05	10 55
St. Prosper Que.....	45	478	4,372	397	9	74	43 72	32 43	11 29
Way's Mills, Que	48	670	*161	397	9	92	48 30	37 08	11 22
Totals and averages for Quebec.....	261	2,703	4,152	358	9	80	41 52	32 87	8 65
St. Joseph, N.B.....	71	322	3,535	218	6	86	35 35	30 27	5 08
Sussex, N.B.....	33	447	*192	490	10	97	57 60	46 78	10 82
Scotsburn, N.S.....	20	135	*214	372	7	105	64 20	52 53	11 67
Kensington, P.E.I.....	31	245	4,729	327	7	62	47 29	29 62	17 67
Totals and averages for the Maritime Provinces	155	1,149	4,451	342	8	88	49 94	39 17	10 77

* As Way's Mills, Que., Scotsburn, N.S., and Sussex, N.B., are creamery sections, the yield per cow is taken in pounds of fat, valued at 30 cents per pound.

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Mr. Freeman Brown, recorder at the Farmers' Union, Ont., dairy record centre in sending in the following interesting notes, states:—

“One thing that should encourage men to take up cow-testing is that it will show to them that they are spending more time in looking after cows that do not pay for their keep than would pay many times over for the little time spent in weighing and sampling.

“I am trying to get some of the men in my district to see not only the great benefit of a pure-bred sire, but to note how much energy the cows are losing at their expense by trying to digest an occasional extra amount of feed which is not suitable, not being succulent or forming a well balanced ration.

“Cow-testing helps to improve in different ways. Several men that take an interest in the test find that it pays to care for the cows better. They have made great improvements by getting more light, air and whitewash in the stables, and by brushing the cows.”

THE PROFIT FROM A GOOD COW.

A grade cow at Oxford Mills earned \$100.15 from the factory for 9,245 pounds of milk from June 26 to December 4. The milk used at home was 4,520 pounds, worth \$49.60, total value of milk \$149.75. Her feed cost \$63.93, leaving \$85.62 clear profit.

A neighbour with 8 cows sent only 23,157 pounds to the factory, receiving \$239.48. Outside the factory season the 8 cows gave 5,555 pounds worth \$57.87, total value \$297.35. Deducting feed estimated at \$29.50 per cow, or \$236, the clear profit is \$61.35, or only \$7.66 per cow.

Thus the first good cow mentioned made as much clear profit above the cost of feed as would be made by *eleven* of the type of the herd of 8.

There was also a considerable saving of time and labour.

WHAT SOME DAIRYMEN HAVE TO SAY ABOUT COW-TESTING.

“Cow-testing showed me how to feed intelligently; one cow would not respond to any extra feed, while another took much more and gave a good profit.”

“I was surprised to find that one cow gave me \$15.12 in the year more than another of the same age that freshened just four days different.”

“One cow cost me \$2.55 more to feed than she earned.”

“I was astonished to find one cow gave 1,145 pounds of milk more than another that freshened a month earlier.”

“I did not think I had such poor cows till I commenced to weigh each one separately.”

“I find it pays to test as well as weigh the milk; one cow gave me 568 pounds of milk more than another, but 16 pounds of fat less. One cow gave me 45 pounds of fat more than another the same age.”

“I found that my two best cows, age 5, gave me 799 pounds of milk more than three others also age 5. Seeing they were all fed alike, I had to handle 5 poor cows to get the profit made by one good cow. This looks like waste of time.”

One farmer at Spencerville, Ont., states that cow-testing has done more for the upbuilding of dairying and for increasing the profit per cow than anyone would think possible.

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Another large milk shipper in this district says he finds it pays him to feed each cow according to her yield, instead of lumping all together and feeding all just alike.

"I consider the scales and tester to be the greatest aid. The scales act as governor to regulate your care and feed by, and in this way alone I had added 500 pounds of milk to each of my cows' production. I weigh every milking of every cow; it pays big."—(Boharm, Sask.)

"We have weighed each milking for four years and have made the following averages: 1910, 19 cows, 7,240 pounds of milk; 1911, 21 cows, 7,450; 1912, 23 cows, 7,319; 1913, 25 cows, 8,000 pounds. *We now sell all cows that do not make 7,000 lbs., and all two-year-olds that go under 6,000 lbs.* We also find that a cow that freshens in November or December gives from two to three thousand pounds more than one that freshens in April or May."—(Lansdowne, Ont.)

"The more we follow up weighing and testing of each cow's milk, the more we are convinced that it is the only way to show what our cows are doing. We thought the weighing night and morning might become tedious, but it is just the opposite."—(Clarenceville, Que.)

One of the interesting points at Farmers' Union is that the three highest yields of milk per acre, namely 1,108, 1,114 and 1,219 pounds were made on a comparatively small area, the largest farm concerned being 85 acres. On this place 12 grade cows were kept with an average yield of 7,893 pounds of milk each.

On another farm in this centre of 90 acres carrying nine cows averaging 7,899 pounds of milk, the cost of feed was put at \$40 and the clear profit above cost of feed was just the same figure, \$40. The milk was produced at 50 cents per 100 pounds.

One man keeping 8 cows farmed only forty acres and made a profit of \$25.55 per cow. A neighbour, also with 8 cows, has 175 acres of land and made a profit of \$9.86 per cow.

In the two largest herds, one man with 17 cows averaged 4,446 pounds of milk; the other with 19 cows averaged 6,534 pounds of milk. The 19 cows made almost *three times as much* clear profit over cost of feed.

The lowest yield of milk per acre was 184 pounds from 4 cows on 100 acres; the highest was 1,219 pounds from 8 grades on 40 acres, over *six times as much* per acre.

It will be noticed from table 11 that in the five poorest herds the average yield per cow was 3,883 pounds of milk. In order to yield the total milk given by all the 42 cows it would only have needed 20 cows, instead of 42 of the kind that averaged 8,033 pounds each. What energy is wasted!

Mr. J. B. Lowery, recorder at the Frankford dairy record centre, draws attention to some wonderful differences between cows in the same herd. For instance, a seven-year-old freshened April 3, gave, in four months, 5,073 pounds of milk and 193 pounds of fat, while a six-year-old freshened April 4, gave in the same four months only 3,672 pounds of milk and 133 pounds of fat. This is a difference of 1,401 pounds of milk and 60 pounds of fat.

The weigh can at the factory never reveals these differences. They can be detected only by the farmer himself in his own stable.

One of the features of the production at this centre is the low cost of milk. Men give \$27.25 and \$28.47 as the cost of feed, so with cows giving 5,000 and 6,000 pounds of milk the cost per 100 is as low as 45 and 43 cents.

The differences in average yields of herds in this centre are suggestive. At Acme the average of 27 cows is 8,314 pounds of milk and 269 pounds of fat. At Frankford the average of 26 cows is only 5,424 pounds of milk, and 191 pounds of fat, a monetary value of at least \$28 per cow *difference* in income during the season.

Mr. Wm. Weir, recorder at Peterborough, states that a number of cows in that dairy record centre have been disposed of through the information received by weigh-

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ing and sampling. One man let seven go. Another dairyman who intended to let a cow go thought he would test her, and at the age of 15 her milk sold for \$199 at four cents per quart.

Mr. J. C. Raphael, recorder at Mallorytown, has the following statement from one member: "We have increased our milk flow and cash returns over 33 per cent in three years. This weighing and sampling is the only method of ascertaining the profit or loss on each cow, and how much. From a business standpoint it is compulsory."

Mr. F. J. Wilkinson, recorder at the Way's Mills, Que., dairy record centre, makes a valuable contribution to the arguments in favour of feeding well and knowing what is fed, in the following experience of a member in his district: "It is quite a common practice among the farmers to allow their cows to dry off as soon as they come to the barn in the fall. They say: 'Oh, it does not pay to feed strippers; there is no profit in it.' Now, this is just the way the owner of this herd felt. But last summer he started cow-testing and soon got very much interested in getting his reports each month. He fed a little better through the fall months, as he did not like to see his reports show too much of a decrease, and when the cows came to the barn he kept right on feeding better, and here is the result. He had 14 cows. During the three months from January 1 to March 31 he fed them \$88.75 worth of meal and \$47.32 worth of roots, and during that time those cows produced 986 pounds of butter fat for which he received \$235.24, leaving him a net profit of \$199.17. He considers this net profit, as what hay and straw they consumed he would have had to feed them if they had been dry. I might say I saw this herd the other day and I actually believe they are in enough better condition to pay for the extra feed they consumed even if they had not produced anything. Now this man never would have thought of doing this if he had not started cow-testing. The idea is that he got interested in what his herd was doing and wanted to see them do better. And this is just what cow-testing does every time. When a man goes into it in the right spirit it gives him an interest in his herd."

Mr. Wilkinson also states that there is an increasing interest in dairying as a whole. Men who never thought of cow-testing before are now buying hand Babcock machines to do their own testing.

At Way's Mills the 49 cows in the five best herds in table 11 produced 3,185 pounds of fat *more* than did the 64 cows in the five poorest herds. This fat at 30 cents per pound brought in an *additional income* to the amount of \$955.50.

Mr. Wilkinson reports that no fewer than ten pure-bred dairy sires have been brought into that centre during the past year.

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TABLE 11.—Comparison of the 5 herds showing the HIGHEST average yield of Milk per Cow with the 5 herds showing the LOWEST average yield in each Dairy Record Centre.

	5 Best Herds.		5 Poorest Herds.		Difference in Average Yield per Cows.
	Number of Cows.	Average Yield	Number of Cows.	Average Yield	
		Lb. Milk.		Lb. Milk.	Lb. Milk.
Alexandria	54	5,503	81	4,016	1,487
Avonmore.....	61	5,672	83	4,469	1,203
Farmers' Union.	56	8,033	42	3,883	4,150
Frankford.....	45	7,600	49	5,516	2,084
Kingston	77	6,852	94	5,084	1,768
Mallorytown.....	112	7,212	74	3,703	3,507
North Gower.....	56	6,154	56	4,492	1,662
Peterboro.....	43	7,811	40	4,341	3,470
Listowel.....	60	9,053	59	3,466	5,587
Woodstock.	83	10,445	55	4,055	6,390
Average for Ontario.....	647	7,482	633	4,318	3,164
Shawville	47	5,338	57	3,551	1,787
St. George ..	31	3,990	56	2,700	1,290
Ste. Henedine.....	34	5,219	56	2,526	2,693
St. Hyacinthe ..	83	6,469	42	3,052	3,417
St. Prosper.....	48	5,908	36	2,938	2,970
Way's Mills.....	49	5,575	64	3,000	2,575
Average for Quebec.....	292	5,636	311	2,960	2,676
St. Joseph.....	31	5,600	29	2,076	3,524
Sussex.....	66	6,350	71	3,375	2,975
Scotsburn.....	34	7,075	40	3,650	3,425
Kensington.....	37	6,508	44	3,502	3,006
Average for the Maritime Provinces.....	168	6,393	184	3,267	3,126

This table brings out some noteworthy points.

1. Even in taking average yields of comparatively large districts, the variations seen when comparing similar yields are curious. For instance, the average yield in the 5 best herds at Alexandria is 5,503 pounds of milk per cow, but at Woodstock it is 10,445 pounds. The difference of 4,942 pounds is surprising.

2. The larger yields are not being made by just a few prime cows but by *good herds*, as large as those composed of poor cows, herds where yields are uniformly good and where even better results are being zealously sought.

3. While the average difference in Ontario between the best and the poorest yields of all the 100 herds is 3,164 pounds of milk per cow, the two extremes are far wider apart; the average of the 5 best herds at Woodstock is more than the average of the 5 poor herds at Listowel by 6,979 pounds.

4. From this table it is evident that there is the strongest possible encouragement for every dairy farmer whose yield per cow is at present only medium, or below the average, to strive for better results. The point is that far better results are now being obtained in his own vicinity not by one or two exceptionally good individual cows of phenomenal breeding and ability, but by each one of the cows in five neighbouring herds.

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5. The difference in income between these two sets of cows is too striking to be overlooked. If the 633 cows in the poor Ontario herds had been as good producers as those in the good herds, the *additional* revenue from their milk would have been *twenty thousand dollars*.

CONTRASTS AT ST. HYACINTHE, QUEBEC.

In a herd at St. Hyacinthe, Que., 1 five-year-old cow gave 7,407 pounds of milk and 267 pounds of fat, while another five-year-old fell short of that record by 3,462 pounds of milk and 103 pounds of fat.

Without cow-testing the owner of these two cows would have had no means of discovering that one cow brought in \$38 more than the other.

In a herd at Grand Rang there is a difference in yield of 3,010 pounds of milk between 2 three-year-olds.

In a herd at Notre Dame a three-year-old gave 1,324 pounds of milk more than an eight-year-old.

In a herd at Ste. Rosalie a six-year-old gave 3,450 pounds of milk more than a five-year-old on the same feed.

Mr. A. Hamel, recorder at St. Hyacinthe, states that following the system of testing, one factory is changing from the pooling system to payment for milk by fat. There is also a fast-growing sentiment in favour of better sires, so that the present year will probably see some good pure-breds brought into the district.

A STRONG ARGUMENT IN FAVOUR OF COW-TESTING.

It is only when dairy records are available that comparisons can be made which show not only the value of cow-testing, but the unnecessary labour and general loss involved in caring for poor cows.

For instance, one might take 500 cows in any one of several districts and ascertain that the average value of their milk is \$47, the cost of feed \$32, the profit \$15.

But on closer scrutiny of milk records, such comparisons as the following are possible. Referring particularly to St. Prosper, Que., the 100 best cows in 14 herds had an average yield of 6,798 pounds of milk, but the 100 poorest cows yielded only 3,048 pounds, indicating a *difference* of 3,750 pounds of milk in the average yield per cow.

This means that practically *twice as much* labour, feed, stable accommodation, &c., have to be provided as is necessary. This is terrible waste.

But carrying on the comparison another step, it appears that the 100 best cows brought in a gross income of \$7,137.90 which is actually \$3,937.50 more than the 100 poorest, whose milk was worth only \$3,200.40. If this is true in comparing just a few cows in one district, does it not indicate what a huge sum is available for any county or province when the herds are composed of the best cows, selected on their records, and their progeny?

But further, on an expenditure of \$38.42 for feed the best cows made an average profit of \$32.96; on the other hand the poorest cows returned an average profit of only \$1.74 above the cost of feed.

In other words, to make as much profit as was returned by each one of the best cows, it took, of the poorest, the combined efforts of *eighteen*.

This certainly is an indication of most serious waste of energy spread over several herds, but it also indicates selected cows in their true light as both money and profit makers.

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TABLE 12.—Some contrasts at the St. Prosper, Que., Dairy Record Centre.

Taking the 422 cows in 42 herds the general results were:—

Average yield of milk per cow, 4,494 pounds at \$1.05.. ..	\$47 18
Cost of feed	32 90

Net profit per cow	\$14 28
----------------------------	---------

But on separating the best and poorest cows, the items were:—

	Best Cows.	Poorest Cows.	Difference.
Number of Cows.....	100	100	
Average yield of milk per cow.....	6,798 Lb.	3,048 Lb.	3,750 Lb.
Total value at \$1.05.....	\$ 7,137 90	\$ 3,200 40	\$ 3,937 50
Cost of feed.....	3,842 00	3,026 00	816 00
Total net profit	\$ 3,295 90	\$ 174 40	\$ 3,121 50
Average income per cow	\$ 71 38	\$ 32 00	\$ 39 38
Cost of feed.....	38 42	30 26	8 16
Average net profit above cost of feed.....	\$ 32 96	\$ 1 74	\$ 31 21

From these figures it will be seen:—

(1) An "average" of a herd, or of a number of herds, seldom, if ever, gives due credit to good cows. Consequently, it must at the same time unduly enhance the supposed value of poor cows.

(2) From the feed to the extra value of \$316 given to the best cows there was an additional clear profit of \$3,121.50.

(3) The difference in the gross income is remarkable. The 100 best cows brought in far more than twice as much as the 100 poorest. The actual difference from the same number of cows was an additional \$3,937.50.

(4) While the average profit with all the 422 cows was \$14.28 per cow, it will be seen from the lower half of the table that the 100 best cows made an average profit of \$32.96, but the 100 poorest gave an average profit of only \$1.74 per cow. Thus, it is seen that the profit made by each one of the "best" cows was equal to that of *eighteen* of the "poorest."

It pays to keep good cows.

It pays to find out the difference between cows by keeping dairy records.

PURE-BRED SIRE.

It is a singular fact that out of the hundreds of herds tabulated it is the rare exception to find any pure-bred sire that is four years old; the ruling age seems to be one or two. As this is by no means the first time that this has been noticed, it would seem to be high time to lay special emphasis again on this point; probably *many excellent bulls are killed before their real value is known*. In other dairy countries it is common to find dairy sires aged ten and twelve, or even older. With any real system of selection and settled policy in building up a good herd, special value must be placed on the sire. A bright lookout may well be kept for the sire to be depended

on for heavy milking progeny. When his get is found to be doing well it has happened many a time that the sire has been killed, at a most distinct loss to the dairy world. Several of such sires would each be worth hundreds of dollars as individuals, and would have added thousands of dollars revenue to dairymen.

There are also many herds where apparently no continuity of ideas or policy is followed. The sire in use, for instance, is a one-year-old grade Holstein, but the cows are described as grade Shorthorns, the year before they were simply grades. In other herds there is a mixture of grades of three and four breeds, with a sire of another breed as head of the herd. The particular wisdom shown in crossing breeds to this extent has yet to be proved.

Is it not about time to stop this constant chopping and changing, and stick to the one breed best suited to the locality?

TABLE 13.—Showing the value of a Pure-bred Dairy Sire. Contrast at Farmers' Union, Ont., Dairy Record Centre.

—	Number of Herds.	Number of Cows.	Total Lb. Milk.	Average Lb. Milk Per Cow.
Group 1, Pure-Bred sire	7	83	655,801	7,901
Group 2, Grade sire.....	7	84	395,873	4,712
DIFFERENCE in favour of Pure-Bred sire.....		.....	259,928	3,189

This table indicates:—

1. Even with one cow less, the first group of 83 cows, where the herds were headed by a pure-bred sire, gave 259,928 pounds of milk *more* than the second group.

2. The difference in production per cow was 3,189 pounds of milk, which if divided amongst the 7 owners meant a total of \$2,646.87, or \$378.12 additional money for each man.

Mr. A. J. Gaudet, recorder at the St. Joseph, N.B., dairy record centre, instances the case of a cow bought at a very high price on account of her good conformation and the colour of her milk. She gave only 3,320 pounds of milk.

Another cow, sold because thought to be the poorest in the herd, gave 4,899 pounds of milk, while the poorest cow gave only 3,020 pounds.

Some breeders have rather prejudiced the sale of pure-bred sires because they have placed, at good prices, bulls that, though highly recommended, have proved quite unsatisfactory. The demand for milk records of the dam and granddam should be made just as well as for the certificate of registration.

In various herds in this centre also are curious contrasts in yields: An eight-year-old gave 5,920 pounds of milk and 227 pounds of fat, being 3,595 pounds of milk and 126 pounds of fat more than a six-year-old; 4,585 pounds of milk from a cow 11 years old and only 2,422 from a six-year-old; \$33.82 from one cow, only \$4.09 from another; 188 pounds of fat from one, only 97 from another.

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TABLE 14.—Contrasts between the average yields of the Ten Best and the Ten Poorest Cows, 4 years old and upwards, in the St. Joseph, N.B., Dairy Record Centre.

Division.	Average of the 10 Best Cows.		Average of the 10 Poorest Cows.		Difference.		Difference between the Best and Poorest Individual Cow in the Division.
	Lb. Milk.	Lb. Fat.	Lb. Milk.	Lb. Fat.	Lb. Milk.	Lb. Fat.	
Bathurst.....	6,293	220.9	2,818	107.1	3,475	113.8	6,195
Dorchester.....	6,715	272.1	2,221	91.1	4,494	181.0	5,986
Rogersville.....	4,692	174.5	2,126	102.2	2,566	72.3	3,964
St. Louis.....	4,342	164.0	1,895	72.7	2,447	91.3	4,858

This table clearly indicates some of the discoveries made by cow-testing in almost every district.

Besides drawing attention to the extraordinary differences in production found not only between individual cows in the same herd, even as much as 6,195 pounds of milk as at Bathurst, but between the best and poorest groups of 10 cows in each division, the table points also to the great possibilities for the progressive dairyman. Here there is indeed "plenty of room at the top."

No man, or group of men, should be content with keeping mature cows giving only 2,220 pounds of milk as at Dorchester, Rogersville and St. Louis, when in the same locality yields of many cows are over 6,290 pounds, two and even *three times* as much.

VARIATION IN FEED COST OF MILK PER 100 POUNDS.

Not the least striking figures collected in the dairy census are those relative to the feed cost of milk.

It is patent that there is more than one contributory factor. The cows may not be naturally either heavy or economical producers, feed may be scarce, unsuitable combinations of feed may be used, or there may not be sufficient attention paid either to liberal feeding or to feeding according to each cow's production. All of these, among other conditions, may help to increase the cost.

It remains to be stated, however; that even where conditions do not vary to any large extent the difference in the cost of milk, as given for each herd in the various dairy record centres, is so remarkable in its variation that there is evidently most urgent need for our ordinary factory patron to pay far more attention to this most vital point.

Knowing that the factory price for milk is not likely to vary very much or to soar very high, he may well inquire closely what his milk costs to produce.

It is a fact that in many districts milk and fat cost some men half as much again, sometimes twice as much, even *more than three times* the price at which their neighbours produce it.

For instance, at Frankford, Ont., one herd averaging 7,231 pounds of milk per cow, the feed cost is only *43 cents* per 100 pounds. At the same factory for another herd averaging 6,252 pounds of milk per cow the feed cost is *78 cents* per 100 pounds.

At Mallorytown, Ont., the cost varies from 47 cents up to \$1.01 per 100.

At Listowel, Ont., the figures are from 50 cents to \$1.02 per 100.

At Alexandria, Ont., they run from *50 cents* to \$1.29 per 100.

At Peterborough, Ont., is an extreme instance. One herd averages 7,000 pounds of milk at a feed cost of \$27 per cow, the milk therefore costing 39 cents per 100. In a

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neighbouring herd feed to the value of \$40.83 is given per cow to produce only 3,124 pounds of milk. This milk therefore costs \$1.30 per 100 pounds, or *over three and a third times* as much. It would be rare to find raw material costing such widely different prices in other manufacturing industries.

Evidently there is plenty of room for planning more efficient work on the part of some dairymen. The cow will jog along without reference to dollars and cents. It is the owner's business to figure on cost and production.

Mr. Alfred Street, recorder at the Avonmore, Ont., dairy record centre, writes as follows:—

"Farmers feel that it is not always wise to dispose of an animal as the result of the first year's records, as some cows are like some varieties of apple trees, producing a much larger quantity every second year.

"After carefully studying for two years the herd record work in this record centre I have come to the conclusion that the weakest point with those who are keeping records (and with those as well who are not) is their method or lack of method of feeding. Some herds are fed quite liberally but not the proper kinds of feed to produce a maximum flow of milk. They do not seem to realize that quantity of feed will not take the place of quality. In a herd consisting of 7 or 8 pure-bred Ayrshires and seven or eight grades, the ration that was fed to the milking cows during the month of March was 20 pounds of corn silage, and 16 pounds of timothy hay and 1 pound of meal per day. The meal consisted of ground corn, oats and barley. The roughage you will notice is very low in protein and the meal also is comparatively low in protein. In fact, where it is figured out for protein and carbohydrates and fat it shows .5 pound of the former and 9.3 pounds of the latter, showing it to be a decidedly unbalanced ration as the nutritive ratio is 1:17. The standard being from 1:5 to 1:6 shows that the above ration is about three times too wide. A milking cow giving from 20 to 25 pounds milk per day requires at the least from 2 to 2½ pounds of protein in her feed per day, while the above cows received only ½ pound. Of course there are farmers in this district who feed a better ration than the above, but it is fairly typical of the way the average farmer feeds his milking cows. Now is it any wonder that cows do not milk very well on such feed as the above? The man who is keeping records is not warranted in condemning his cows for making small records when fed in a manner such as the above.

"Another striking thing about the above ration is this: The man brought the above meal and paid \$1.40 per hundred pounds for it. He could have bought bran, gluten feed and oat chop for practically the same price, and it would have made ever so much a better meal ration for milk production when feeding roughage so low in protein as he was feeding. From my experience I have come to the conclusion that there is a danger of many cows being condemned by their owners without being given a fair test under proper feed and care."

At Peterborough is a herd of 6 cows whose owner states that they were fed at an average cost of \$35.63. As they gave 8,788 pounds of milk the average profit above cost of feed is \$52.25.

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TABLE 15.—Some Individual Yields, and Averages of Four Neighbouring Herds, St. Hyacinthe, Que.

Cow.	Age.	Total Yield.		Cost of Feed.	Cost of 100 lb. of Milk.	Cost of 1 lb. of Fat.
		Milk.	Fat.			
		Lb.	Lb.	\$	\$ cts.	Cents.
1.....	6	6,066	222	32 00	0 52	14
2.....	6	3,845	153	32 00	0 83	20
3.....	3	2,891	125	32 00	1 10	25
Average of herd A.....		3,968	161	32 00	0 80	19
4.....	7	9,283	339	51 00	0 55	15
5.....	6	6,250	268	41 00	0 65	15
6.....	10	5,215	217	39 00	0 76	18
Average of herd B.....		6,808	263	42 00	0 64	15
7.....	5	4,430	166	31 00	0 70	18
8.....	5	3,348	135	31 00	0 93	22
9.....	6	2,850	102	31 00	1 09	30
Average of herd C.....		3,419	134	31 00	0 91	23
10.....	8	4,340	177	28 00	0 65	16
11.....	3	3,560	144	28 00	0 79	19
12.....	4	1,940	80	28 00	1 46	35
Average of herd D.....		3,566	144	28 00	0 79	19

This table is prepared to show:—

- (1) The difference in cost of milk per 100 pounds between individual cows. For instance, cow No. 1 in herd A produced milk at 52 cents; cow No. 2 in the same herd, also 6 years old, produced it at 83 cents; but the milk given by cow No. 12 cost \$1.46.
- (2) The difference in cost of milk in different herds. In herd B the average cost was only 64 cents; in herd C it was 91 cents.
- (3) The benefit of liberal feeding of good cows. In herd B the average cost of feed was \$43.00 per cow, running as high as \$51.00 for one cow, but as the cows were good producers, the milk and fat were produced at a low cost, thereby ensuring good profit.

TABLE 16.—High and Low Cost of Feed per cow compared with Yield of Milk. Contrasts of Herds at Dairy Record Centres.

CENTRE.	HIGH COST OF FEED.			LOW COST OF FEED.		
	Number of Cows in Herd.	Average Cost of Feed.	Average Yield of Milk.	Number of Cows in Herd.	Average Cost of Feed.	Average Yield of Milk.
		\$ cts.	Lb.		\$ cts.	Lb.
Avonmore, Ont	14	44 00	6,157	15	31 50	4,234
Alexandria, "	10	41 88	6,590	10	25 50	3,670
Farmers' Union, "	15	50 50	8,591	9	29 50	3,590
Frankford, "	7	54 21	9,119	8	25 00	5,889
Kingston, "	13	51 15	6,325	19	31 92	4,732
Listowel, "	18	60 47	9,399	10	30 45	3,027
Mallorytown, "	25	45 00	8,280	13	27 30	3,938
North Gower, "	8	39 70	6,293	14	28 90	4,797
Peterborough, "	5	58 18	6,738	11	34 63	4,305
Woodstock, "	18	57 00	9,843	8	34 20	3,420
Totals and averages	133	50 25	8,003	117	30 07	4,167
Ste. Henedine, Que..	5	36 53	5,020	11	22 70	2,323
St. Hyacinthe, "	7	43 75	6,806	10	26 00	3,290
St. Prosper, "	10	42 26	6,367	6	24 16	2,344
Way's Mills, "	10	70 00	9,120	14	31 00	3,390
Sussex, N.B.	14	72 03	8,070	16	34 97	2,310
St. Joseph, N.B.	12	45 35	5,780	5	24 66	2,264
Scotsburn, N.S.	6	63 42	7,450	11	36 50	3,984
Kensington, P.E.I.	12	46 01	6,380	6	21 23	2,702
Totals and averages	76	53 90	7,699	79	29 10	2,890

From this table it is seen:—

(1) That in Ontario, with 133 cows at ten centres, an average investment of \$50.25 in feed resulted in an average yield of 8,003 pounds of milk, the milk therefore costing 62 cents per 100 pounds for feed.

(2) That at the same places, on the other hand, where the feeding was on a cheaper scale, averaging only \$30.07 per cow for 117 cows, the average yield of milk was only 4,167 pounds, *scarcely more than half as much*, while the feed cost was 72 cents per 100 pounds, that is, ten cents more.

(3) That in Quebec and the Maritime Provinces, similarly, the yield of milk is higher where the cost of feed is greater. With 79 cows the feed cost of milk was \$1.00 per 100.

(4) That amongst the herds with the low yields and low cost of feed per cow there is apparently a waste of feed, as some herds do not appear to pay for their feed; on the other hand, in every case where the cost of feed is high, the yield of milk is also high.

(5) That in the Ontario herds, those cows fed at a high cost show a profit on their milk over the cost of feed of 59 per cent. This is *21 per cent more* than those cows fed at a low cost where the average profit over cost of feed is only 38 per cent.

It is from such records and contrasts as these that the greatest encouragement is derived, because not only is there considerable satisfaction from noting the high individual and average yields of milk, even with feed costing \$63 and \$72 per cow, but the table also shows very clearly that *it pays to feed liberally*.

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DIFFERENCE IN PROFIT RECEIVED.

In one Quebec centre are two herds of 13 cows each on adjoining farms. The average yield in one case was 190.4 pounds of fat per cow which, at 30 cents per pound, means an average income per cow of \$57.12. Feed was worth \$35 per cow, so the average net profit per cow above the cost of feed was \$22.12. Just the other side of the line fence the neighbour's 13 cows averaged 92.4 pounds of fat, or an income of only \$27.72 per cow. He said feed was worth \$30, so it looks like a vanished profit, a loss of \$2.28 per cow.

In another herd in the same centre at Way's Mills the average yield of 19 cows was 4,418 pounds of milk and 176 pounds of fat, which until further examined looks pretty good. However, the 10 best cows gave an average of 236.3 pounds of fat, worth \$70.89; deducting the average price of feed, \$30, the profit was \$40.89 per cow. The remaining 9 cows in the herd averaged only 109 pounds of fat, worth \$32.73. As their feed averaged the same as the other 10, namely \$30, the clear profit was only \$2.73. Thus the 10 cows in this herd made *fifteen times as much profit* as did the nine.

In the Sussex, N.B., dairy record centre the average feed cost of 100 pounds of milk varies from 69 cents to \$1.43. The average feed cost of 1 pound of fat varies from 18 to 37 cents.

The yield of milk per cow varies from an average of 2,900 pounds in one herd of 9 to 6,834 pounds in a herd of 17.

In contrast to the particularly low estimates of cost of feed at Shawville, Que., the cost of feed at Sussex is put by some men at \$58.10, \$66.39 and even as high as \$72.03 per cow.

One recorder states that judging by the look and condition of some of the cheaply fed herds in the spring, the total cost of feed in some instances has not been over-estimated. As a consequence of this attempt at economy some cows are not worth twenty dollars, little scrubby things hardly fit to be seen.

INCREASES IN YIELD OF MILK AND FAT.

It is a matter of great satisfaction that so many dairymen have already reaped a substantial harvest of results from their brief experience with systematic cow-testing. Not only are the homes, the farms, the buildings, improved, but broad foundations are laid for further developments. With proof before their eyes that cow-testing is decidedly "worth while," steps are taken for provision of more variety in the rations through better crops, for better herds through the introduction of good pure-bred sires, and for a more liberal support of the factory from the same number of acres and cows as before.

It is evident that when the average is increased, as at Mallorytown, in two years from 5,700 to 7,650 pounds of milk per cow, or a good 33 per cent, that cow-testing means a great deal to that farmer and his family.

At Avonmore some good increases are 1,038 and 1,757 pounds per cow, results achieved by six men.

At the Listowel dairy record centre there are twenty-eight dairymen who have made considerable increases in the yield per cow. Comparing the year 1912 with 1913 the increase has been 738 pounds of milk and 38 pounds of fat with 774 cows. Many of the herds have increased over 1,000 pounds of milk. Some of the largest increases are: 10 cows now giving 8,294 pounds of milk and 272 pounds of fat, an increase of 1,225 pounds of milk and 32 pounds of fat per cow; 10 cows now giving 5,901 pounds of milk and 225 pounds of fat, an increase of 1,988 pounds of milk and 85 pounds of fat per cow; 8 cows now giving 6,226 pounds of milk and 253 pounds of fat, *an increase of 2,445 pounds of milk and 126 pounds of fat per cow.*

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It is impossible to lay too much stress on the new inspiration given to many a man who has been struggling along with "just cows" giving about 3,500 pounds of milk, but who is now seized with the idea of the 10,000-pound mark, or higher.

That is what cow-testing accomplishes.

In the Peterborough, Ont., district are over twenty dairymen who have made an increase of 2,000 pounds of milk per cow in three years.

In the Farmers' Union, Ont., section can be given the names of at least twelve dairymen who have increased the yield over 700 pounds of milk per cow in one year.

It is not only the average herds that are helped. For instance, a herd averaging 4,211 pounds of milk per cow, has increased 744 pounds of milk per cow, but a neighbouring good herd, that yielded 6,596 pounds of milk or an average of 2,385 pounds of milk per cow more than the former herd, has been increased by 1,088 pounds per cow. This herd is therefore now giving 7,684 pounds of milk per cow and is a good instance of how cow-testing encourages a dairyman to feed and care for his herd better.

A striking instance is also found here of a well-developed dairyman who is now getting 8,591 pounds of milk per cow, *more than double* the average of four years ago. The old way was just trying to get the cows through on as little feed as possible till the grass came. But he admits he never made any money that way until he commenced to feed what the cows would eat. Now they pay.

Another good increase, showing that there is money made by feeding the cow well and caring for her properly, has been made with a herd that never used to exceed \$40 income per cow, but in 1913 was \$78.93,*almost double*.

INCREASES in a Herd at St. Hyacinthe, Que.

		1911.	1912.	1913.
Number of cows	No.	7	7	7
Total yield of milk	Lb.	38,070	40,370	47,640
Total yield of fat	"	1,549	1,699	1,846
Total profit	\$	135 70	236 73	247 58
Average per cow	Lb.	5,438	5,767	6,806
Average profit	\$	19 38	33 82	35 37

Increase in profit is 82 per cent.

A record is kept of the weights of each kind of feed given to each cow; ensilage and alfalfa are supplied to the cows, and they are particularly well cared for.

TABLE 17.—Herd at Metairie St. Joseph, St. Hyacinthe, Que.

		1911.	1912	1913.
Number of cows	No.	48	48	48
Average pounds of milk	Lb.	5,413	5,103	6,019
Sold at \$2.00 per 100 pounds	\$	108 26	102 06	120 38
Cost of feed per cow	"	58 30	58 00	50 00
Profit above cost of feed		49 96	44 06	70 38

The increase in profit over the year 1912 was \$26.32, in other words 59 per cent.

In 1906 the herd consisted of 51 cows, with an average yield of 3, 997 pounds of milk. The increase is therefore seen to be 2,022 pounds per cow.

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Each cow is fed grain according to her yield of milk, thus the cost of feed is being reduced. The selling price of the milk, used for local consumption, is high, and although the cost of feed is high the profit per cow is good. The profit would not be good unless the most careful attention were paid to the herd, feeding each individual cow according to her special dairy capacity, and keeping records of production. This is the essence of good dairy business and common sense.

IMPROVEMENT in a St. Hyacinthe, Que., Herd.

		1911.	1912.	1913.
Number of cows.....	No.	7	7	7
Total pounds of milk.....	Lb.	24,775	27,320	34,035
Total pounds of fat	"	1,019	1,124	1,444
Cost of feed.....	\$	24 00	26 00	33 35
Total profit	"	79 75	155 29	200 02
Average pounds of milk.....	Lb.	3,540	3,902	4,865
Average pounds of fat.....	"	145	160	206
Average profit.....	\$	11 39	22 18	28 58

Cows are far better cared for than formerly, two that made no profit have been weeded out, soiling crops are provided against a summer drought..
The increase in profit is 150 per cent.

THE VALUE OF COW-TESTING.

In the St. Hyacinthe,Que., district are at least fifteen dairymen who can show substantial increases in the yield of milk and fat per cow for the year 1913 since they commenced testing in 1911. Some of these men are now getting 6,800 pounds of milk and 263 pounds of fat per cow. Such increases are as much as 1,380 and 1,400 pounds of milk per cow, indicating increases of 25, 34 and 38 per cent.

In fifteen herds the *increase* in income is over \$1,846.

Cow-testing has enabled these progressive dairymen to detect and dispose of 117 worthless cows; it has shown them the value of soiling crops and alfalfa, of pure-bred dairy sires, of ensilage, of providing water in pasture, often by windmills. Cow-testing has shown the value of caring for the herd better; many cows are now being fed more liberally, yet the cost of the milk per 100 pounds is being steadily reduced.

CHAS. F. WHITLEY.

APPENDIX VI.

CREAMERY COLD STORAGE BONUSES.

There were 110 applications for creamery cold storage bonuses received during the year. Of this number 39 were approved and 38 received the full bonus of \$100, the remaining creamery receiving \$64.50 for a special type of refrigerator. In the other 71 cases the conditions were not complied with.

Full particulars respecting this bonus will be found in Circular No. 6, Dairy and Cold Storage Series, and the plans and specifications which are recommended are contained in Bulletin No. 36 of the same series.

LIST OF THE CREAMERIES that Received the Bonus in 1913-14.

Name of Proprietor or Manager.	Post Office Address.	County.
QUEBEC.		
Jos. St. Onge.....	St. Boniface.....	St. Maurice.
Sévère Boisvert & Frères.....	St. Sévère.....	"
Albert Roy.....	St. Ephrem de Tring.....	Beauce.
Ovide Blais.....	St. Grégoire.....	Nicolet.
Léon Chouinard..	St. Paschal.....	Kamouraska.
Ecole d'Agriculture Rev. Ol. Martin....	Ste. Anne de la Pocatière..	"
Adjutor Lecompte.....	St. Pierre.....	Montmagny.
Syndicat de beurrerie, Albert Tremblay.	St. Aubert.....	L'Islet.
Alp. Perreault.....	Précieux Sang.....	Nicolet.
Albert Poulin.....	St. Victor de Tring.....	Beauce.
Majorique Lessard.....	St. François.....	"
Ludger Monfet... ..	Ste. Croix.....	Lotbinière.
Edouard Jean.....	St. Fabien.....	Rimouski.
Eugène Faucher.....	St. Flavien.....	Lotbinière.
Joseph Garneau, <i>et al</i>	St. Flavien.....	"
Syndicat de beurrerie, A. Douville, Sec.	St. Jean Deschaillons.	"
Wm. Copping.....	St. Jean.....	Iberville.
R. Maillet.....	St. Honoré de Shenley.....	Beauce.
Gervais. Jacob & Rivard.....	St. Stanislas.....	Champlain.
J. Bolla.....	St. Cyrille.....	Drummond.
Albert Bonneau.....	St. François.....	Montmagny.
Tancrède Dionne.....	Fraserville.....	Témiscouata.
H. Gagnon.....	St. Jean de Dieu.	"
Jos. Dumas.....	".....	"
La Cie. de Laiterie, Z. Cloutier, gérant.	St. Pierre.....	Montmagny.
J. G. Roy.....	Cap Chat.....	Gaspé.
Montreal Dairy Co.....	Montreal.....	
Léon Gélinas.....	St. Albert de Warwick.....	Arthabaska.
F. Vaillancourt.....	New Richmond.....	Bonaventure.
W. R. Tannahill.....	Tatehurst... ..	Chateauguay.
ONTARIO		
S. R. Brill.....	Teeswater.....	Bruce.
J. B. Jackson.....	Simcoe.....	Norfolk.
H. A. McIntosh.....	Fenelon Falls.....	Victoria.
T. A. Stevens.....	Wheatley.....	Kent.
Laurentia Milk Co.....	Caledonia.....	Haldimand.

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LIST OF CREAMERIES that Received the Bonus in 1913-14—*Continued.*

Name of Proprietor or Manager.	Post Office Address.	County.
MANITOBA.		
Elkhorn Creamery Co.....	Elkhorn.....	Brandon.
ALBERTA.		
Innisfail Creamery Co.....	Innisfail	Red Deer.
NOVA SCOTIA.		
Rev. A. B. Côté.....	Meteghan	Digby.
L. C. Leblanc, Sec.-treas.....	Meteghan River.....	"

SUMMARY OF BONUSES paid since this policy was first adopted in the year 1897.

544	Creameries have received the full bonus of \$100....	\$54,400 00
145	" " " a bonus of \$75.. . . .	10,875 00
139	" " " " " \$50.. . . .	6,950 00
14	" " " for special refrigerators ..	1,100 25
842	Totals	73,325 25

APPENDIX VII.

COLD STORAGE SUBSIDIES.

The following is a complete list of the cold storage warehouses erected under contracts for subsidies since the Cold Storage Act was passed in 1907, and which are now in operation:—

Name.	Total Refrigerated Space.	Cost.	Total Subsidy.
	Cu. ft.	\$	\$
The New Brunswick Cold Storage Co., St. John, N. B.....	744,000	167,000 00	50,100 00
Scott & Hogg, Peterborough, Ont	90,000	14,500 00	4,350 00
The Halifax Cold Storage Co., Port Hawkesbury, N.S.....	75,000	30,386 69	9,115 99
Cold Storage Ltd., Woodstock, N. B	37,161	25,577 00	7,673 10
The J. D. Moore Co., St. Mary's, Ont.....	105,000	36,019 62	10,805 88
Lemon Bros., Owen Sound, Ont.....	33,600	20,000 00	6,000 00
The Chatham Fruit Growers' Association, Chatham, Ont.....	50,000	19,350 00	5,805 00
The Palmerston Cold Storage Co., Palmerston, Ont.....	109,984	35,000 00	10,500 00
Davis & Fraser, Charlottetown, P. E. I	150,000	50,000 00	15,000 00
The B. Wilson Co., Victoria, B. C.....	64,000	75,000 00	22,500 00
The Trenton Cooperage Mills, Ltd., Trenton, Ont.....	166,446	50,919 41	15,275 82
The Dominion Fish and Fruit Co., Quebec, P. Q	225,000	222,843 22	66,852 96
The Lockeport Cold Storage Co., Lockeport, N. S.....	59,940	56,850 18	17,055 05
The Lawrence Produce Co., Brockville, Ont.....	106,000	52,000 00	15,600 00
Flavelles Ltd., Lindsay, Ont	131,510	53,000 00	15,900 00
Gunns, Ltd., Harriston, Ont.....	57,069	38,877 30	11,663 19
Campbell & Hamilton, Calgary, Alta	111,050	90,000 00	27,000 00
The St. Thomas Cold Storage Co., St. Thomas, Ont	174,141	123,700 00	37,110 00
The Brandon Creamery and Supply Co., Brandon, Man.....	27,500	32,000 00	9,600 00
O'Keefe & Drew Abattoir Co., Chatham, Ont.....	144,400	53,741 45	16,122 43
The Canadian Fish and Cold Storage Co., Prince Rupert, B. C....	781,000	350,000 00	105,000 00
Moosejaw Cold Storage Co., Moosejaw, Sask.....	189,764	90,000 00	27,000 00
J. H. Sansregret, Joliette, Que.....	23,394	22,444 10	6,733 23
City Cold Storage Co., Regina, Sask.....	100,672	48,257 00	14,477 10
The Brantford Cold Storage Co., Brantford, Ont.....	36,000	29,600 00	8,880 00
The Whyte Packing Co., Mitchell, Ont	30,600	21,000 00	6,300 00
Algoma Produce Co., Sault Ste. Marie, Ont.....	55,806	67,000 00	20,100 00
H. & K. Trading Company, Penticton, B. C.....	32,164	33,000 00	9,900 00
Edmonton Cold Storage Co., Edmonton, Alta.....	150,056	152,000 00	45,600 00
Henri Gauvin, Vonda, Sask.....	24,000	22,450 00	6,732 00
North Atlantic Fisheries, Ltd., Port Hawkesbury, N. S	338,550	200,000 00	60,000 00
	4,483,807	2,282,515 97	684,754 97

Further contracts have been entered into with the Acadia Cold Storage Co., Halifax, N.S.; the Lake St. John Cold Storage Co., Herbertville, Que.; the Southern Alberta Cold Storage Co., Lethbridge, Alta.; and J. H. Early, Saskatoon, Sask.

APPENDIX VIII.

SOME STATISTICS OF THE EXPORT AND IMPORT TRADE IN DAIRY PRODUCE.

TOTAL EXPORTS OF CHEESE AND BUTTER in Fiscal Years 1880 to 1914, inclusive:

Butter.			Cheese.		
Year.	Quantity.	Value.	Year.	Quantity.	Value.
Year ended June 30.	Lb.	\$	Year ended June 30.	Lb.	\$
1880.....	18,535,362	3,058,069	1880.....	40,368,678	3,853,366
1890.....	1,951,585	340,131	1890.....	94,260,187	9,372,212
1891.....	3,768,101	602,175	1891.....	106,202,140	9,508,800
1892.....	5,736,696	1,056,058	1892.....	118,270,052	11,652,412
1893.....	7,036,013	1,296,814	1893.....	133,946,365	13,407,470
1894.....	5,534,621	1,095,588	1894.....	154,977,480	15,488,191
1895.....	3,650,258	697,476	1895.....	146,004,650	14,253,002
1896.....	5,889,241	1,052,089	1896.....	164,689,123	13,956,571
1897.....	11,453,351	2,089,173	1897.....	164,220,699	14,676,239
1898.....	11,253,787	2,046,686	1898.....	196,703,323	17,572,763
1899.....	20,139,195	3,700,873	1899.....	189,827,839	16,776,765
1900.....	25,259,737	5,122,156	1900.....	185,984,430	19,856,324
1901.....	16,335,528	3,295,663	1901.....	195,926,397	20,696,951
1902.....	27,855,978	5,660,541	1902.....	200,946,401	19,986,281
1903.....	34,128,944	6,954,618	1903.....	229,099,925	24,712,943
1904.....	24,568,001	4,724,155	1904.....	233,980,716	24,184,566
1905.....	31,754,303	5,930,379	1905.....	215,733,259	20,300,500
1906.....	34,031,525	7,075,539	1906.....	215,834,543	24,433,169
Year ended Mar. 31.			Year ended Mar. 31.		
1907 (9 months).....	18,078,508	4,011,609	1907 (9 months).....	178,141,567	22,006,584
1908.....	4,786,954	1,068,703	1908.....	189,710,463	22,887,237
1909.....	1,326,355	1,521,436	1909.....	164,907,139	20,384,666
1910.....	4,615,380	1,010,274	1910.....	180,859,886	21,607,692
1911.....	3,142,682	744,288	1911.....	181,895,724	20,739,507
1912.....	8,844,402	2,077,916	1912.....	163,450,684	20,888,818
1913.....	828,323	223,578	1913.....	155,216,392	20,697,144
1914.....	1,228,753	309,046	1914.....	144,478,340	18,868,785

DETAILED EXPORTS OF DAIRY PRODUCTS for year ended March 31, 1914.

To all countries.		Quantity.	Value.
			\$
Cheese.....	Lb.	144,478,340	18,868,785
Butter.....	"	1,228,753	309,046
Cream.....	Gal.	1,323,929	1,289,680
Condensed milk.....	Lb.	9,339,382	666,941
Casein.....	"	270,486	11,071
Fresh milk.....	Gal.	307,188	47,645
Total value.....			21,193,168

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COMPARATIVE VALUE OF DETAILED EXPORTS for Years ended March 31, 1909, 1910, 1911, 1912, 1913 and 1914.

	1914.	1913.	1912.	1911.	1910.	1909.
	\$	\$	\$	\$	\$	\$
Cheese	18,868,785	20,697,144	20,888,818	20,739,507	21,607,692	20,384,666
Butter	309,046	223,578	2,077,916	744,288	1,010,272	1,521,436
Condensed milk	666,941	25,554	305,678	469,406	541,372	90,520
Fresh milk	47,645	1,412	975	4,276		
Cream	1,289,680	751,123	792,687	1,714,528		
Casein	11,071	15,342	38,302	37,009		
	21,193,168	21,714,153	24,104,376	23,709,014	23,159,336	21,996,622

EXPORTS TO UNITED STATES—Values of Dairy Products Exported to the United States during the Years ended March 31, 1908, 1909, 1910, 1911, 1912, 1913 and 1914.

	1914.	1913.	1912.	1911.	1910.	1909.	1908.
	\$	\$	\$	\$	\$	\$	\$
Cheese	187,335	41,366	31,653	36,034	23,995	19,428	17,732
Butter	111,894	75,192	103,819	91,313	199,854	18,246	38,899
Cream	1,289,655	751,123	792,595	1,714,528	220,446	8,256	2,737
Condensed milk..	301,177	5,107	3,983	11,474			
Casein	11,071	15,342	38,302	37,009			
Fresh milk	47,645	1,412	975	3,257			
	1,948,777	889,542	971,327	1,893,615	445,295	45,930	59,368

Down to the beginning of the fiscal year 1911, the exports of fresh milk, cream, condensed milk and casein were included under one head in the Trade and Navigation returns.

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STATEMENT of Exports of Butter by Countries in Fiscal Years, 1904 to 1914 inclusive, (Years ended June 30, 1904 to 1906 ; Years ended March 31, 1907 to 1914).

To	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Great Britain.....	4,400,774	5,568,999	6,802,003	3,805,925	823,761	1,273,484	587,493	401,621	1,769,510	173	31,950
British West Indies.....	127,790	80,323	87,085	59,313	85,371	95,370	76,026	70,444	54,365	26,604	27,970
British Guiana.....	6,412	8,929	11,654	8,113	12,861	7,711	9,497	10,682	4,865	1,772	5,578
Other British Possessions.					5		544	1,423	86	188	560
Newfoundland.....	82,422	82,387	48,283	56,516	34,931	54,552	50,074	57,198	76,691	62,943	79,669
China.....	1,763	562	761	5,041	1,319						
Cuba.....	796	658	285	1,034	720	96	22	985	158	223	69
Danish West Indies.....	5,868	4,473	4,560	3,664	4,939	4,418	4,697	1,438	2,155	1,158	1,456
Germany.....	25,641						9,777				
Japan.....	6,027	6,496	9,373	9,062	4,258	3,019	1,002	840	240		
St. Pierre.....	26,598	21,827	17,668	17,615	18,749	14,740	14,036	18,560	8,216	12,561	13,497
United States.....	6,497	70,580	33,965	3,539	38,899	18,246	199,854	91,313	103,819	75,192	111,894
British Africa.....	16,417	4,914	2,056	265		22,458	1,873	10,460	2,596		
Mexico.....			1,268	484	265	660	936	59	171	31	
U. S. Colombia.....	2,272	200	1,747	2,145		1,105	832		69		3,860
Bermuda.....		50,482	47,045	33,900		14,273	43,638	54,665	41,209	33,677	25,606
France.....	14	14,440	4,155								
Holland.....	8,175	13,680									
Belgium.....	10	116									10
Central America.....	686	1,062		4,932		7,074	2,500	3,948	3,268	2,890	3,212
Corea.....		15	3,431		9,448		15				
Dutch Guiana.....		186		40			48				
Turkey.....		50	30	21							
Porto Rico.....			170								
Panama.....											
Austria-Hungary.....						4,229	7,320	19,881	10,000	5,420	3,715
Alaska.....						1				746	
Totals.	4,724,155	5,930,379	7,075,539	4,011,609	1,068,703	1,521,436	1,010,274	744,288	2,077,916	223,578	309,046

STATEMENT OF EXPORTS OF CHEESE by Countries in Fiscal Years 1904 to 1914 inclusive (Years ended June 30, 1904 to 1906;
Years ended March 31, 1907 to 1914.)

To	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Great Britain.....	24,099,004	20,174,211	24,300,908	21,909,878	22,763,736	20,268,166	21,481,565	20,577,542	20,733,064	20,497,195	18,533,880
Australia.....	6,247	5,411	5,350	245	525	223	171	88	58	448	569
British Africa.....	7,559	10,612	16,623	18,261	16,362	12,466	16,425	22,601	26,873	28,100	26,128
B. W. Indies.....	34,253	36,176	25,509	13,666	27,533	26,940	24,035	25,844	26,259	24,164	25,900
B. E. Indies.....	315	62	20								
British Guiana.....	1,193	2,571	3,860	3,143	6,228	4,452	5,232	4,747	7,872	6,975	8,581
Other British Possessions.....	216				9	1	1,011	1,575		24	1,145
Hong Kong.....	1,253	1,079	1,029		851	2,452	733	1,077	1,407	3,335	1,912
New Zealand.....	1,039	1,642	1,795	1,690	1,362	54	1,267	467	645	385	449
Newfoundland.....	21,754	35,171	30,992	37,748	35,792	41,163	36,912	39,855	44,435	63,900	50,414
Belgium.....	10	22	287		2,080			1			
Cuba.....	211	102	811		57		17	419	53	852	324
China.....	1,899	2,013	2,195	2,206	1,572		756	1,040	1,302	1,305	987
Danish West Indies.....	1,936	2,046	2,056	1,568	1,985	1,937	2,453	2,148	2,704	2,416	4,666
France.....	41	700	7,203		10	81		5,534	38	2,331	
Japan.....	1,609	753	775	1,071	1,444	2,200	1,208	2,700	1,419	2,392	3,697
Philippine Islands.....	100										
St. Pierre.....	356	341	875	318	190	364	311	338	274	390	295
United States.....	5,386	14,182	16,082	6,900	17,732	19,428	23,995	36,034	31,653	41,366	187,335
Norway and Sweden.....		104	994								
Germany.....		364		54	3		102				
Bermuda.....		12,505	14,033	9,080	9,245	3,174	11,385	1,126	10,494	20,738	20,397
Dutch Guiana.....	23	18	13	9							
Mexico.....	159	329	1,594	630	168	499	108	72	56	26	
French West Indies.....										55	
Central America.....		80			347	3		112			6
Holland.....			97	110							
U. S. of Colombia.....			68							23	570
Other countries.....					6		5	142	212	724	1,530
Totals.....	24,184,566	20,300,500	24,433,169	22,006,584	22,887,237	20,384,666	21,607,692	20,739,507	20,888,818	20,697,144	18,868,785

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CHEESE IMPORTS INTO THE UNITED KINGDOM, from British Trade Returns, years ended December 31.

From	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Canada	1,925,835	1,698,847	1,541,502	1,566,546	1,607,064	1,473,275	1,352,570	1,293,768
United States...	233,445	114,300	105,555	54,617	38,247	150,321	21,727	22,449
Netherlands	229,341	241,551	279,401	285,329	231,832	207,917	268,286	292,134
New Zealand....	126,216	192,301	264,995	368,531	453,785	397,845	543,917	547,182
Other countries.	123,957	125,234	114,633	115,067	125,427	118,964	122,787	142,046
Total.....	2,638,794	2,372,233	2,306,086	2,390,090	2,456,340	2,348,326	2,308,787	2,297,579
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Canada	73·0	71·7	66·8	65·5	65·5	62·7	58·6	56·3
United States...	8·8	4·8	4·6	2·3	1·6	6·4	0·9	1·0
Netherlands ...	8·7	10·2	12·1	12·0	9·4	8·9	11·6	12·7
New Zealand...	4·8	8·1	11·5	15·4	18·5	16·9	23·6	23·8
Other countries.	4·7	5·2	5·0	4·8	5·0	5·1	5·3	6·2
Total.....	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

BUTTER IMPORTS INTO THE UNITED KINGDOM from British Trade Returns, Years ended December 31.

From	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Russia.....	606,549	657,549	639,118	601,712	584,040	638,284	683,650	751,414
Sweden... ..	182,803	226,740	238,929	312,142	345,684	360,357	335,014	332,331
Denmark.....	1,675,761	1,818,811	1,857,103	1,764,027	1,726,091	1,707,178	1,618,048	1,706,759
Germany.	10,701	7,297	3,195	2,965	3,481	.....	.....	.....
Netherlands	195,366	168,496	244,356	148,567	154,537	104,655	113,716	153,172
France	319,401	281,306	394,612	413,306	361,249	171,080	246,652	248,579
United States...	157,312	1,063	39,540	693	756	23,052	2,596	164
Australia.	545,827	598,986	409,106	384,619	639,093	874,399	541,253	588,399
New Zealand...	311,672	313,863	221,395	278,581	362,674	276,446	349,012	251,663
Canada	190,968	34,753	47,877	22,522	16,805	61,936	27	813
Other countries.	140,898	101,192	115,590	133,699	131,129	85,305	115,191	105,728
Total	4,337,258	4,210,156	4,210,821	4,062,833	4,325,539	4,302,692	4,005,159	4,139,022
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Russia.	14·1	15·6	15·2	14·8	13·5	14·8	17·1	18·2
Sweden.....	4·2	5·4	5·7	7·7	7·9	8·4	8·4	8·0
Denmark.....	38·6	43·2	44·1	43·4	39·9	39·7	40·4	41·2
Germany.	0·3	0·2	0·1	0·07	0·09	.....	.....	.....
Netherlands	4·5	4·0	5·8	3·7	3·9	2·4	2·8	3·7
France.....	7·1	6·7	9·7	10·1	8·4	4·0	6·1	6·0
United States...	3·6	0·03	0·9	0·01	0·01	0·5	0·0	0·0
Australia.	12·5	14·2	9·5	9·5	14·7	20·3	13·6	14·2
New Zealand...	7·2	7·5	5·3	6·9	8·3	6·4	8·7	6·1
Canada	4·4	0·8	1·1	0·6	0·3	1·4	0·0	0·0
Other countries.	3·5	2·4	2·6	3·3	3·0	2·1	2·9	2·6
Total....	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

N.B.—1913 figures unrevised.

5 GEORGE V., A. 1915

IMPORTS OF DAIRY PRODUCE, for Consumption in Canada, during the Years ended March 31.

	1910.	1911.	1912.	1913.	1914.
	Lb.	Lb.	Lb.	Lb.	Lb.
Cheese.....	683,778	866,653	919,189	1,495,758	1,512,108
Butter.	393,582	1,227,390	3,874,587	7,989,269	7,317,259
Condensed Milk.....	256,124	173,309	133,365	261,555	453,417

IMPORTS OF BUTTER BY COUNTRIES during the Years ended March 31.

Country.	QUANTITIES.				
	1910.	1911.	1912.	1913.	1914.
	Lb.	Lb.	Lb.	Lb.	Lb.
Great Britain.....	6,161	29,252	700,900	767,131	91,900
Australia.	299,440	438,870	101,640	98,112	227,602
New Zealand.. . . .	21,840	464,951	2,139,944	6,018,022	6,732,155
Turkey	240	167	165	.....	1,882
United States.....	61,081	293,937	929,318	1,100,431	262,840
Other countries	4,820	213	2,620	5,573	880
Totals.....	393,582	1,227,390	3,874,587	7,989,269	7,317,259



Refrigerator car inspector testing temperature of butter at railway terminals, Montreal.



Refrigerator car inspector examining bunker for ice supply at Montreal.



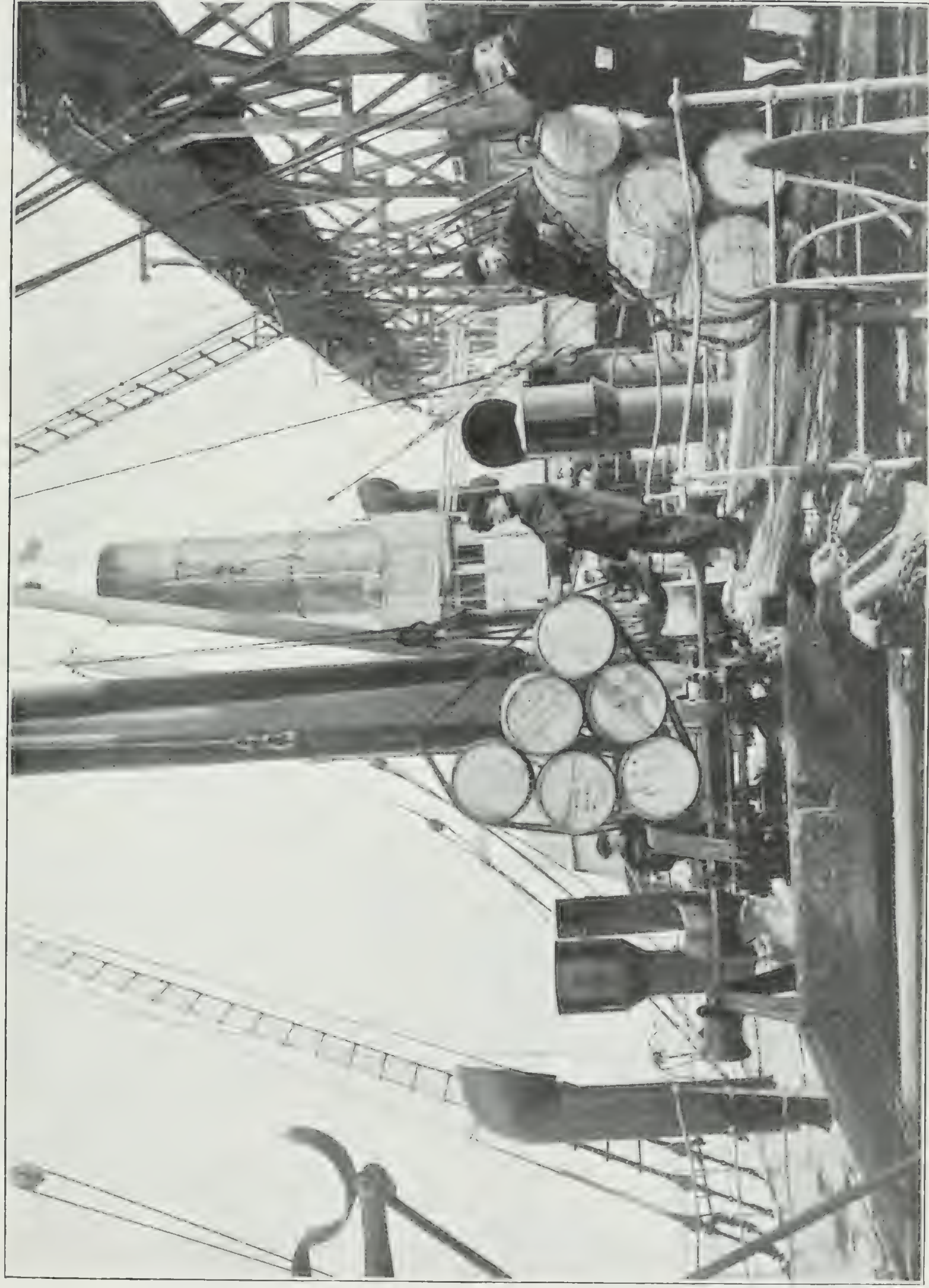
Cargo inspection preparatory to placing thermographs in refrigerated chambers and holds of steamship at Montreal.



Cargo inspector supervising the loading of cheese at Montreal.



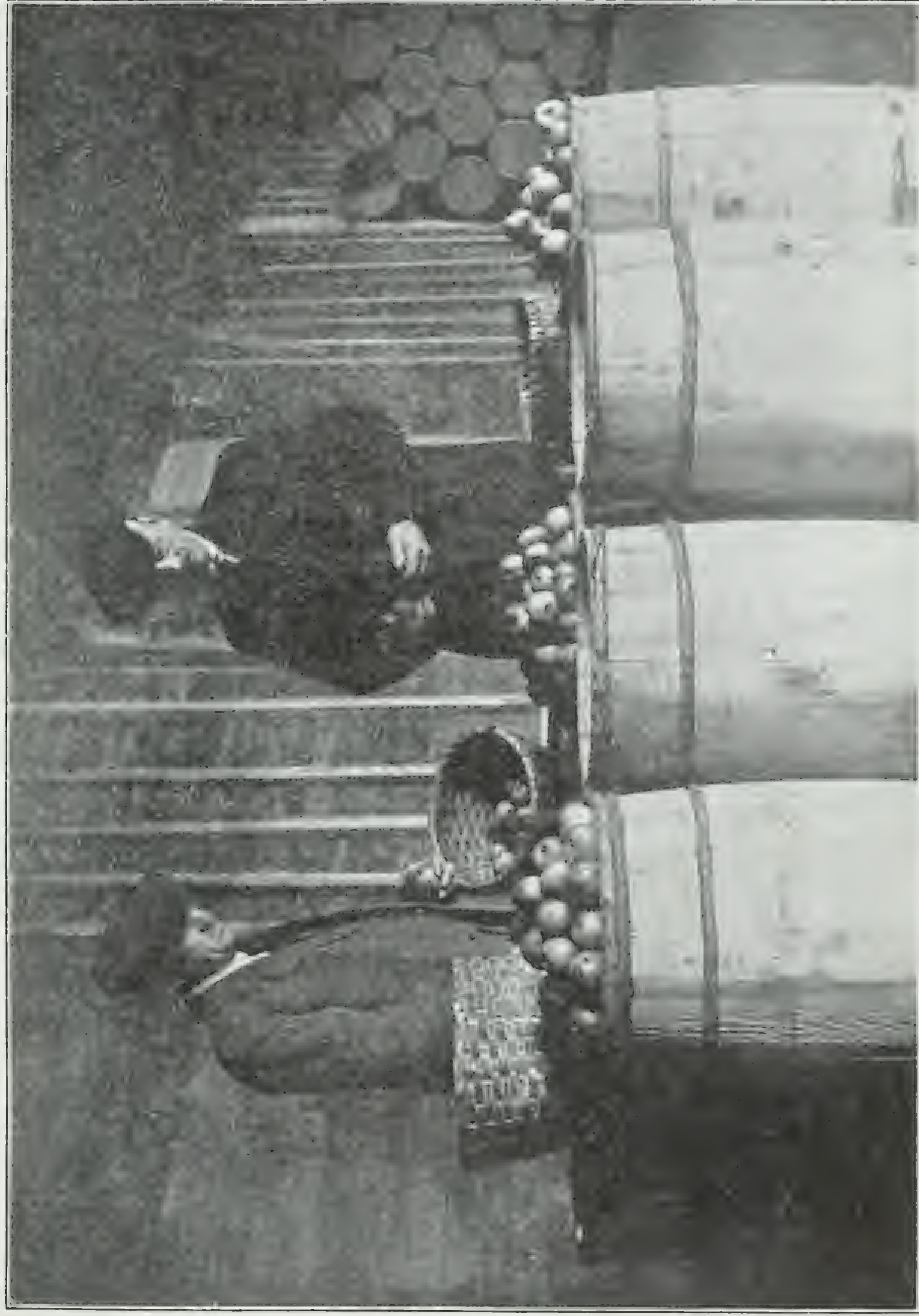
Cargo Inspection Service—Unloading Canadian cheese at London, Eng.



Cargo Inspection Service — Loading Nova Scotia apples at Halifax.



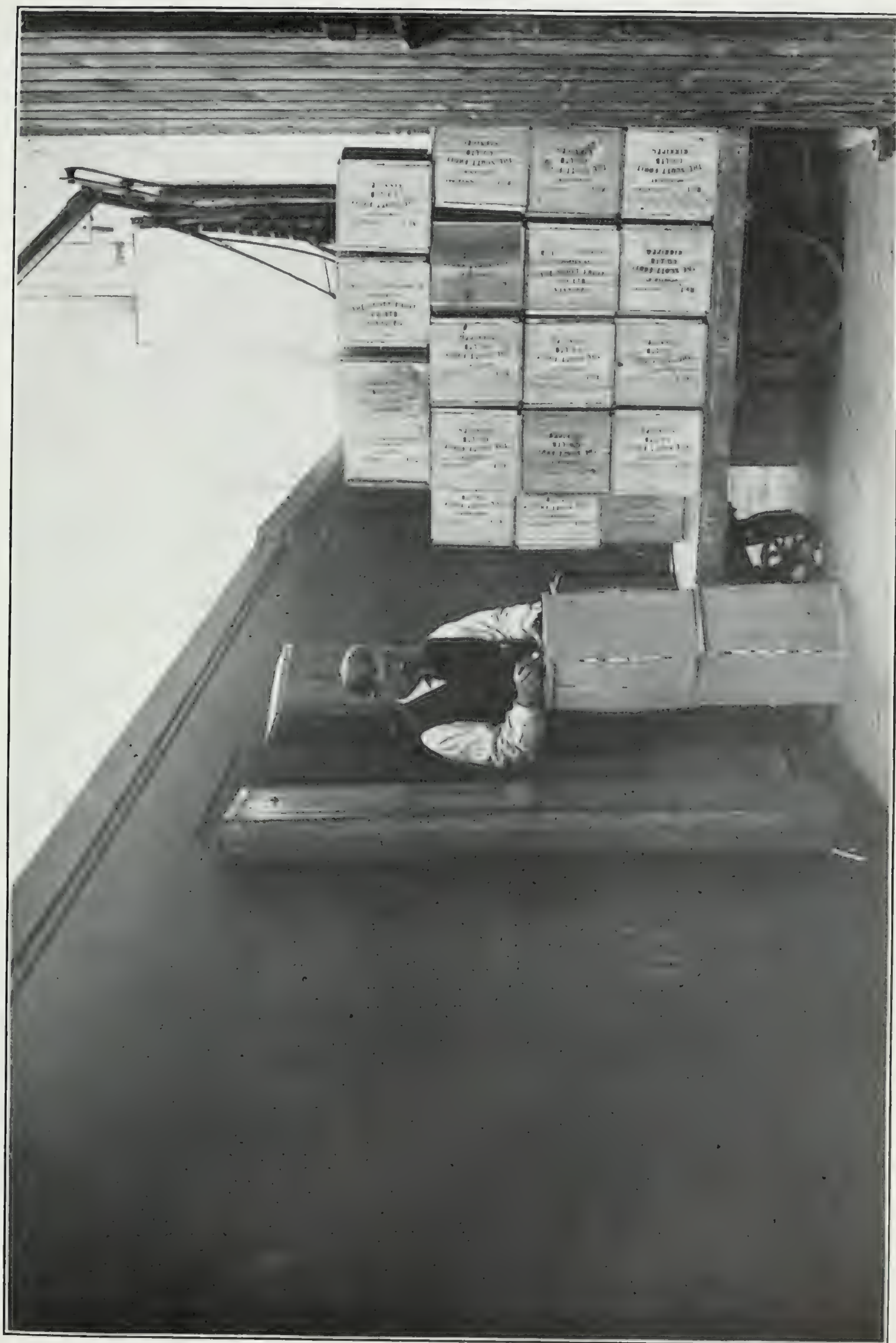
Apple warehouse in Nova Scotia.



Fruit Inspectors at work in Nova Scotia.



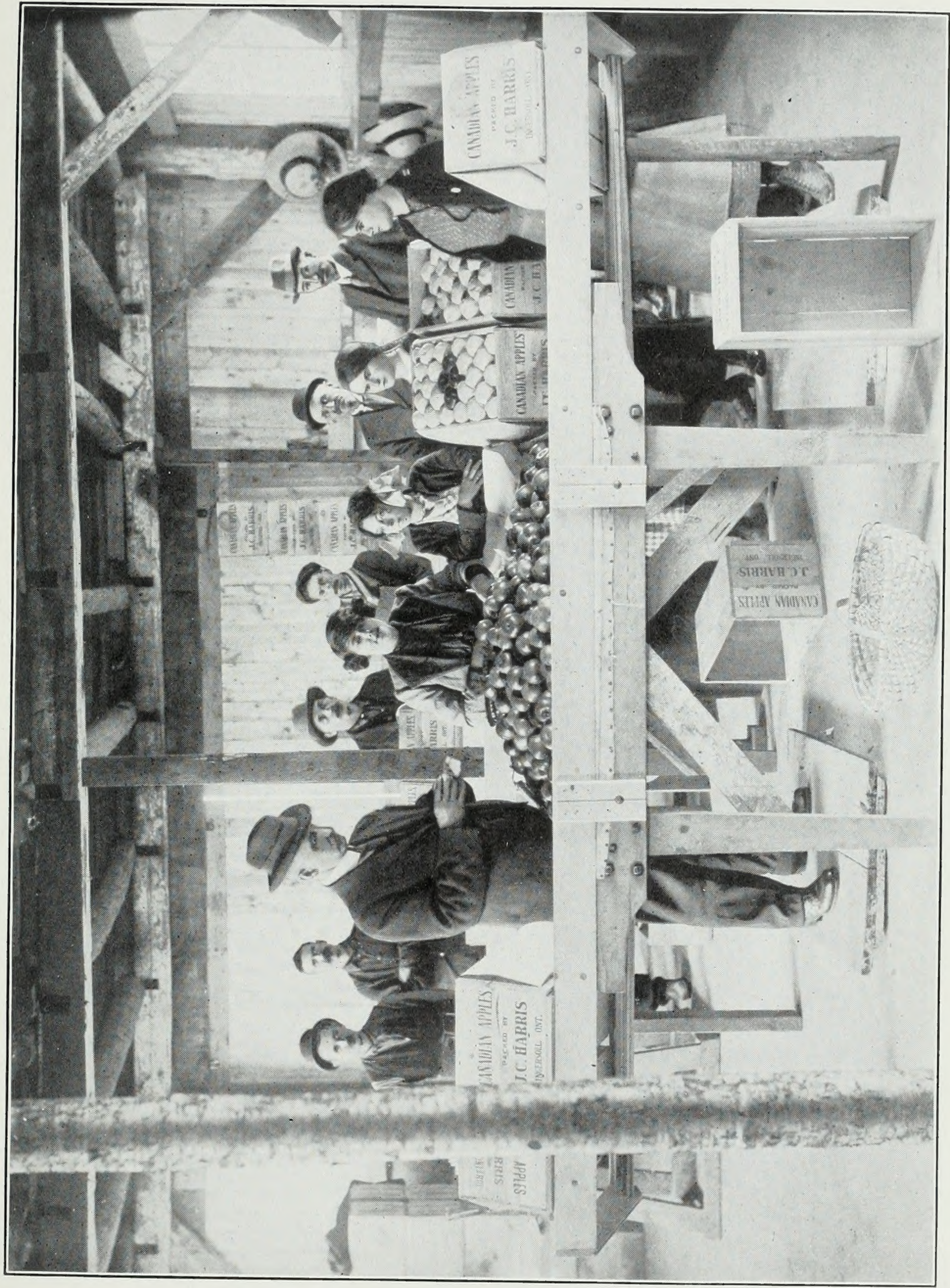
Inspecting Ontario apples in Western Canada.



Marking imported apples in accordance with the Amendments of 1913.



Inspecting imported apples, and showing importer's brand.



Apple packing class.



Demonstrating apple packing at the Toronto Fruit, Flower and Honey Show, 1913.

